

$$794 + 18 = 812$$

THE NEW INTERNATIONAL ENCYCLOPÆDIA

SECOND EDITION

VOLUME XIII

NEW YORK
DODD, MEAD AND COMPANY

1918

Copyright, 1903, 1904, 1905, 1906, 1907, 1909, 1911, 1912, 1915

BY DODD, MEAD AND COMPANY

All rights reserved

Copyright, 1917

BY DODD, MEAD AND COMPANY, INC.

All rights reserved

**THE UNIVERSITY PRESS, CAMBRIDGE, U. S. A.
BOSTON BOOKBINDING CO., CAMBRIDGE, U. S. A.**

ILLUSTRATIONS IN VOLUME XIII

MAPS

	FACING PAGE
KANSAS .	92
KANSAS CITY	102
KENTUCKY	176
KOREA	340

ENGRAVINGS

JUNIPER	34
JUPITER	38
KAABA AND HARAM	62
KANGAROOS	90
KARNAK	116
KILLFISHES AND TOP-MINNOWS	228
KINDERGARTEN .	234
KINGFISHERS, MOTMOTS, ETC.	246
KNOTTING AND SPLICING — I	304
KNOTTING AND SPLICING — II	305
KREMLIN, MOSCOW	366
KYOTO	402
LABORATORY	414
LACE	436
LACE	438
LACHINE RAPIDS	440
LACROSSE	448
LAMPREYS AND DOGFISH	506
LANDSEER ("A Distinguished Member of the Humane Society")	528
LANTERN FISHES	552
LAOCOÖN	554
LARKS AND STARLINGS	570
LEE, ROBERT E.	708
LEGUMES, USEFUL	738
LELAND STANFORD JUNIOR UNIVERSITY	756
LEMURS	766

KEY TO PRONUNCIATION

For a full explanation of the various sounds indicated, see the KEY TO PRONUNCIATION in Vol. I.

ā	as in ale, fate.	ch	as in chair, cheese
ā	" " senate, chaotic.	d	" " Spanish Almodovar, pulgada, where it is nearly like <i>th</i> in English then.
ā	" " glare, care, and as <i>e</i> in there	g	" " go, get.
ā	" " am, at.	g	" " German Landtag = <i>ch</i> in Ger ach, etc.
ā	" " arm, father.	h	" <i>j</i> in Spanish Jijona, <i>g</i> in Spanish gila; like English <i>h</i> in hue, but stronger.
ā	" " ant, and final <i>a</i> in America, armada, etc.	hw	" <i>wh</i> in which.
α	" " final, regal, pleasant	k	" <i>ch</i> in German ich, Albrecht = <i>g</i> in German Arensburg, Mecklenburg, etc.
α	" " all, fall.	n	" in sinker, longer.
ē	" " eve.	ng	" " sing, long.
ē	" " elate, evade.	n	" " French bon, Bourbon, and <i>m</i> in the French Étampes; here it indicates nasalizing of the preceding vowel.
ē	" " end, pet	sh	" " shine, shut
ē	" " fern, her, and as <i>i</i> in sir, etc	th	" " thrust, thin.
e	" " agency, judgment	th	" " then, this
e	" " ice, quiet	zh	" <i>z</i> in azure, and <i>s</i> in pleasure.
i	" " quiescent		
i	" " ill, fit		
ō	" " old, sober.		
ō	" " obey, sobriety.		
ō	" " orb, nor.		
ō	" " odd, forest, not		
o	" " atom, carol		
oi	" " oil, boil		
ōō	" " food, fool, and as <i>u</i> in rude, rule.		
ou	" " house, mouse		
ū	" " use, mule.		
ū	" " unite		
ū	" " cut, but.		
u	" " full, put, or as <i>oo</i> in foot, book		
ū	" " urn, burn.		
y	" " yet, yield		
β	" " Spanish Habana, Córdoba, where it is like English <i>v</i> but made with the lips alone.		

An apostrophe ['] is sometimes used as in tā'b'l (table), kāz'm (chasm), to indicate the elision of a vowel or its reduction to a mere murmur

For foreign sounds, the nearest English equivalent is generally used. In any case where a special symbol, as *g*, *h*, *k*, *n*, is used, those unfamiliar with the foreign sound indicated may substitute the English sound ordinarily indicated by the letter. For a full description of all such sounds, see the article on PRONUNCIATION.

A PARTIAL LIST OF THE LEADING ARTICLES IN VOLUME XIII

JUAREZ. Professor John Driscoll Fitz-Gerald.	KILN. Professor Heinrich Ries.
JUDAS ISCARIOT. Professor Melancthon W Jacobus.	KINDERGARTEN. Professor Paul Monroe.
JUDGMENT (in Philosophy) Professor Evander Bradley McGilvary.	Professor Isaac Leon Kandel.
JUDGMENT, FINAL Professor Nathaniel Schmidt.	KING CRAB Mr. C. William Beebe.
JUNIPER Professor John Merle Coulter.	KINGFISHER. Mr. C. William Beebe.
JUNO AND HERA Professor Charles Knapp	KIPLING. Professor Harry Thurston Peck *
JUPITER Professor Charles Knapp	Dr. Horatio S. Krans.
JURISDICTION. Professor George W Kirchwey.	KITCHENER OF KHARTUM. Mr. James C. Grey.
JURISPRUDENCE. Professor Munroe Smith	KITCHEN MIDDEN. Dr. Clark Wissler.
Professor George W Kirchwey.	KITE. Mr Charles Shattuck Hill, Professor
JURY Professor George W Kirchwey.	Cleveland Abbe, Professor Charles
JUTE. Dr Edwin West Allen.	F. Marvin.
JUVENILE COURT B. B. I. 'sey	KNITTING Mr George Leland Hunter
JUVENILE COURT Professor Alvin Saunders Johnson	KNOTTING AND SPLICING. Captain Lewis Sayre Van Duzer,
KAABA. Professor Nathaniel Schmidt	U S N, Ret.
KAMCHATKA Mr Edward Lathrop Engle	KNOWLEDGE. Professor Evander Bradley McGilvary.
Professor Robert M Brown	KNOX Professor Irving F Wood
KAMERUN Professor Robert M Brown, Mr Oscar	KOCH Dr David Gilbert Yates.
Phelps Austin, Professor J Salwyn	KORAN. Professor Morris Jastrow; Professor
Schapiro, Mr Irwin Seofield Guernsey	Richard J H Gottheil, Professor
KANGAROO Mr C C William Beebe	Nathaniel Schmidt.
KANSAS Mr. D A Ellsworth, Mr. J C Mohler,	KOREA (CHOSEN) Dr. Robert Lilley*, Professor Alexander
Mr. Erasmus Haworth, Professor	F Chamberlain*; Mr. Paul H.
Alvin Saunders Johnson, Mr Allen	Clements.
Leon Churchill	KOREAN LANGUAGE Mr Paul H. Clements.
KANSAS CITY, MISSOURI Mr George H Forsee	KOSSUTH Professor J Salwyn Schapiro.
KANSAS NEBRASKA BILL. Professor James Edward Winston.	Miss Juliet Stuart Poyntz
KANT Professor Evander Bradley McGilvary.	KRUGER Professor J Salwyn Schapiro.
KARNAK Professor Christopher Johnston, Dr.	Miss Juliet Stuart Poyntz.
Oliver Samuel Tonks, Professor	KU-KLUX KLAN, or KUKLUX. Professor James Edward Winston
A. D F. Hamlin	LABOR Professor Henry R Seager
KASSILI Professor Nathaniel Schmidt	Professor Alvin Saunders Johnson.
KEATS. Professor Wilbur Lucius Cross.	LABOR AND CAPITAL. Professor Alvin Saunders Johnson.
Dr Horatio S Krans	LABORATORY. Dr. James E Trough, Professor Robert
KENTUCKY. Professor Leonidas Chalmers Glenn;	William Hall, Professor Alpheus
Mr. Allen Leon Churchill, Professor	Spring Packard*, Professor John
Alvin Saunders Johnson.	Merle Coulter, Professor Edward
KEPLER, JOHANN. Professor T. W. Edmondson.	Bradford Titchener; Mr Herbert
KIAOCHOW. Mr Paul H. Clements.	Treadwell Wade, Professor Martin A
KIDNEY Dr David Gilbert Yates.	Rosanoff, Professor Joseph Sweet-
KIEV (Capital) Mr. Oscar Phelps Austin.	man Ames, Mr. Frederick Remsen
	Hutton; Mr. C. William Beebe
	LABOR COLONIES Professor Alvin Saunders Johnson
	LABOR LEGISLATION. Dr. Roland P. Falkner.
	Professor Alvin Saunders Johnson.

- LABOR ORGANIZATIONS.**
Professor Richard T. Ely; Professor Thomas Sewall Adams; Professor Alvin Saunders Johnson.
- LABOR PROBLEMS.**
Professor Alvin Saunders Johnson.
- LAC.**
Mr. Herbert Treadwell Wade.
- LACE.**
Mr. Moses Nelson Baker.
Mr. George Leland Hunter.
- LACQUER.**
Mr. Moses Nelson Baker.
Mr. George Leland Hunter.
- LAFAYETTE**
Professor J. Salwyn Schapiro.
Miss Juliet Stuart Poyntz.
- LAHORE.**
Mr. Edward Lathrop Engle.
- LAKE.**
Professor Ralph Stockman Tarr.*.
Mr. David Hale Newland
- LAKE DWELLINGS**
Dr. W J McGee.*
Dr. Clark Wissler.
- LAMAISM.**
Professor A. V. W. Jackson.
Mr. F. Vexler.
- LAMARCK.**
Professor Aaron L. Treadwell
- LAMARCKISM.**
Professor Alpheus Spring Packard.*
Mr C William Beebe.
- LAMENNAIS**
Professor Irving F Wood.
- LAMP.**
Mr George Leland Hunter.
- LANCELOT OF THE LAKE**
Professor John Lawrence Gerig
- LANDLORD AND TENANT**
Professor George W Kirchwey.
- LANDS, PUBLIC.**
Dr. James Wilford Garner.
Professor Alvin Saunders Johnson.
- LANDSCAPE.**
Dr. George Kriehn
- LANDSCAPE GARDENING.**
Dr Alfred Charles True.
Dr Edwin West Allen
- LAND TAX.**
Professor Alvin Saunders Johnson.
- LANGUAGE.**
Professor Edward Bradford Titchener.
- LANGUR**
Mr. C William Beebe.
- LANTERN FISH.**
Mr. C. William Beebe.
- LAPLACE.**
Professor David Eugene Smith.
- LAPLAND.**
Mr. Cyrus C Adams, Professor Robert M. Brown; Mr. Olaf O. L. Vico
- LARVA.**
Mr. C. William Beebe.
- LARYNX.**
Dr. Albert Warren Ferris.
Dr. David Gilbert Yates.
- LATEX.**
Professor John Merle Coulter.
- LATIN LANGUAGE.**
Professor George N. Olcott.*
Professor Charles Knapp.
- LATIN LITERATURE.**
Professor George N. Olcott.*
Professor Charles Knapp.
- LATIN UNION.**
Professor Alvin Saunders Johnson.
- LATITUDE AND LONGITUDE.**
Professor Harold Jacoby.
Captain Lewis Sayre Van Duzer, U. S. N., Ret.
- LATITUDE, VARIATION OF.**
Professor T. W. Edmondson.
- LAUGHTER.**
Professor Edward Bradford Titchener.
- LAUNDRY MACHINE.**
Mr. Herbert Treadwell Wade.
- LAVOISIER.**
Professor Martin A. Rosanoff.
- LAW.**
Professor Evander Bradley McGilvary;
Professor Munroe Smith; Dr. Frank Hugh Foster, Professor George W. Kirchwey.
- LAW (in Philosophy).**
Professor Evander Bradley McGilvary.
- LAWN TENNIS**
Mr Charles Andrus Taylor.
- LEAD**
Dr Marcus Benjamin; Mr. Charles Shattuck Hill, Mr David Hale Newland, Professor Martin A. Rosanoff, Professor C. H. Mathewson.
- LEAF**
Professor John Merle Coulter.
- LEARNING IN ANIMALS**
Professor Edward Bradford Titchener.
- LEE, ROBERT E**
Professor William Peterfield Trent.
Dr. Newton D. Mereness
- LEECH.**
Mr C William Beebe.
- LEGAL EDUCATION**
Professor Eugene Wambaugh.
Professor George W Kirchwey.
- LEGEND**
Dr Robert H. Lowie
- LEGERDEMAIN.**
Dr. Clark Wissler.
- LEGION.**
Professor Charles Knapp
- LEGISLATION.**
Professor George W Kirchwey.
Dr. James Wilford Garner.
- LEGISLATURE**
Dr James Wilford Garner.
Professor George W. Kirchwey.
- LEIBNITZ.**
Professor Evander Bradley McGilvary;
Professor David Eugene Smith, Professor F. N. Cole.
- LEIPZIG**
Mr. Edward Lathrop Engle.
- LEIPZIG, BATTLES OF.**
Professor J Salwyn Schapiro
Mr Irwin Scofield Guernsey
- LEITMOTIV**
Professor Alfred Remy.
- LELAND STANFORD JUNIOR UNIVERSITY**
Mr O L. Elliott.
Mr. Allen Leon Churchill.
- LEOPARDI.**
Professor J. D. M. Ford
Professor Albert Arthur Livingston.

THE NEW INTERNATIONAL ENCYCLOPÆDIA

JOVANOVIĆ, yó-vä'nó-vich, JOVAN (1833-1904). A leading Servian poet and journalist, well known by his pseudonym, Zmaj. He was born at Novi Sad (Neusatz), where he became notary (1861), after studying law and jurisprudence at Pest, Prague, and Vienna. In 1861 and 1862 he was editor of *Javor* (The Acorn); then took up the study of medicine at Pest, and, after spending six years there, practiced medicine in several cities and especially in Belgrade, from which he moved to Vienna. His poetical work, both lyric and humorous, appeared in many periodicals. In 1864 he founded the humorous *Zmaj* (The Dragon), from which he took his pen name. In 1866 his play *Saran* appeared. Six years later, after the death of his wife and daughter, he published *Djuleci uvcoci* (Faded Roses). He edited *Ilustrovana ratna kronika* (1877-78) during the war between Russia and Turkey, founded the humorous periodical *Starmali* (1878) and the juvenile *Neven* (1880). He was active as translator from Petöfi, Bodenstedt, and other poets. Each of the two editions of selections from his poems (1880, 1887) contains a biographical sketch.

JOVANOVIĆ, STEPHAN, BARON VON (1828-85). An Austrian general, born at Pazariste. He entered the army when he was 17, took part in the Italian campaign of 1848, and in 1852 was transferred to the military diplomatic corps and was sent to Turkey. He served as consul general in Bosnia (1861-65) and after his return to the army (1865) fought in Italy (1866), and as brigade commander in the Dalmatian uprising of 1869, and occupied various positions until 1877. In 1878 he was intrusted with the task of occupying Herzegovina, accomplished it in a few days, and became military governor of the dependency. He put down the revolt in Krivosije in 1882 and was soon afterward transferred to Dalmatia as civil governor.

JOVANOVIĆ, VLADIMIR (1833-). A Servian statesman and author. He was born at Shabatz, and studied at Vienna and Berlin. His radical politics forced him from his post in the Department of Finance and from a journalistic position at Belgrade. He went to Geneva for two years, but became a leader of the Young Servian National Union in 1866 and three years afterward was tried for complicity in the murder of Prince Michael, but was acquitted. In 1872 he became a member of the Skupshtina and

in 1876 was appointed to the Ministry of Finance. He resigned in 1879, but was reappointed in the following year. From 1889 to 1903 he was a member of the Council of State. Jovanović translated into Servian many works on economics, especially Roacher and Mill, and wrote *Les Serbes et la mission de la Serbie dans l'Europe d'Orient* (1870) and *Emancipation and Unity of the Serbian Nation* (1871).

JOVE. See JUPITER.

JOVEITE. See EXPLOSIVES.

JOVELLANOS, hō'vá-lyä'nós, GASPAR MELCHIOR DE (1744-1811). A Spanish statesman and author. He was born at Gijón in Asturias, of an ancient Spanish family, and studied at the universities of Oviedo, Avila, and Alcalá. In 1767 he was made judge of the criminal court of Seville, in 1778 Chief Justice of the King's Court at Madrid, and in 1780 member of the Council of the Military Orders. Here he made the acquaintance of Campomanes (q.v.) and other prominent literati of Spain, became a member of several scientific societies, and wrote his celebrated *Informe sobre un proyecto de ley agraria* (1787). His connection with the adventurer Cabarrus brought about his banishment to Gijón (1790), where he labored for seven years to promote the material, educational, and social welfare of his native province. He was restored to favor for a short time and made Minister of Justice, but, because of his enmity to the favorite Godoy, was presently banished once more to Gijón and in 1801 cast into prison in Majorca, where he remained for seven years. On the French invasion he was released (1808), and when Joseph Bonaparte became King he was offered the portfolio of the Interior. Declining the office, he joined the Patriotic party, was chosen a member of the Central Junta, and helped to reorganize the Cortes. Stung by the violent opposition and hatred he met, Jovellanos retired to Gijón, whence, on the occupation of the town by the French, he escaped to Vega, where he died. He was the author of numerous compositions in prose and verse. Of the latter the most celebrated are the tragedy *El Pelayo* and the comedy of *El delincuente honrado*. Jovellanos was a man of fine spiritual feeling and versatile genius. His fervent desire to restore his country to its former rank in politics and literature inspired all his actions and gained him the love of the best elements in Spain. His *Memorias políticas* (1801)

were suppressed in Spain, but appeared in a French translation in 1825. Consult his *Obras completas* (7 vols., Madrid, 1831-32, and Barcelona, 1839); "La satire de Jovellanos contre la mauvaïse éducation de la noblesse," edited by A. Morel-Fatro, in *Bibliothèque des universités du midi*, part iii (Bordeaux, 1899); and James Fitzmaurice-Kelly, *Bibliographie de la littérature espagnole* (Paris, 1913).

JOVELLAR Y SOLER, hò-ve-lyär' è só-lër', JOAQUÍN (1819-92). A Spanish general and statesman. Born at Palma de Majorca (1819), he finished his military studies (1836), passed through various grades of service in Cuba (1842-49) and in Spain (1849-53), and then accompanied Marshall O'Donnell to Morocco, where, after being wounded in the battle of Wad-el-Ras, he was decorated upon the battlefield and advanced to a colonelcy (1860). He was promoted brigadier general (1863), served as Assistant Secretary for War (1864), was severely wounded while leading his troops against the insurgents in the street fighting in Madrid (1866), and left the country upon the proclamation of the Republic. Returning later in the year, he was sent by Castelar as Governor General to Cuba. In the first cabinet of Alfonso XII he was War Minister, and later he was again Governor General of Cuba, remaining there until the Peace of Zanjón closed the 10 years' insurrection (June 18, 1878). Subsequently he became captain general of the army, President of the Council of Ministers, life senator, and captain general of the Philippines. Decorated with many orders, he was an Officer of the Legion of Honor, and held the following grand crosses: San Fernando, San Hermenegildo, Isabel la Católica, Military Merit (both the red and the white), and the grand cordon of San Benito de Avis in Portugal.

JOVIANUS, jō'vī-ā'nūs, FLAVIUS (CLAUDIUS. Roman Emperor (363-364 A.D.), the son of Varronianus, a noted general of the period. He was captain of the life guards (*comes ordinis domesticorum*) of the Emperor Julian, attending him in his disastrous campaign against the Persians. Julian having fallen in battle, Jovianus was proclaimed his successor by the army. His first task was to save his army, harassed by the Persians and suffering greatly for want of provisions. He reached the Tigris in safety, but found it impossible to cross, exposed as he was to attack from the Persian force. The Persian King Sapor proposed as terms of peace that the Romans should surrender their conquests west of the Tigris, together with the fortress of Nisibis and many other strongholds in Mesopotamia, and should bind themselves not to aid the Armenians, with whom the Persians were then at war. His troops being in great distress, Jovianus submitted and marched westward. He surrendered Nisibis to the Persians; its inhabitants removed to Amida, which became the chief Roman town in Mesopotamia. On his arrival at Antioch he proclaimed himself a Christian and rescinded the edicts of Julian against the Christians, granting protection to such as remained pagans. He upheld the Nicene or orthodox creed, against the Arians, and restored the bishops who had suffered at their hands. He reinstated Athanasius in the see of Alexandria, from which he had been driven by the Arians. Acknowledged by the various provinces, he set out from Antioch for Constantinople, stopping at Tarsus to pay

funeral honors to Julian's remains. Continuing his journey in unusually severe cold, of which several of his attendants died, he reached Antioch, where he assumed consular dignity, and a few days after came to Dadastana in Galatia. The next morning (Feb. 17, 364 A.D.) he was found dead in his bed. Some attribute his death to suffocation from the fumes of a charcoal fire in his room, others to the dagger or poison of an assassin. He was 33 years of age and had reigned seven months. Valentinian I was proclaimed Emperor by the army. Consult: Schiller, *Geschichte der römischen Kaiserzeit*, vol. ii (Gotha, 1887); Seeck, *Geschichte des Untergangs der antiken Welt*, vol. iv (Berlin, 1911); *The Cambridge Medieval History*, vol. 1 (New York, 1911).

JOVILÆ. See IOVILÆ.

JOVINIAN. An Italian heretic of the fourth century. He was an opponent of monachism, of celibacy, and of the maceration of the body by fasting, but himself remained unmarried. He held that Mary, after the birth of Jesus, ceased to be a virgin, that the blessedness of heaven does not depend on the merit of good works, that a Christian cannot sin willfully, but will resist and overcome the devil. He advocated his opinions first at Milan; but, Ambrose forbidding their propagation, he went to Rome about 388. He and those who followed him were condemned and excommunicated in councils held at Rome and at Milan in 390. Pope Siricius confirmed the sentence, and the Emperor Honorius enacted laws against the Jovinians. Their leader was banished to the lonely island of Boa, off the coast of Illyria, where he died before 406. But his opinions spread, and it was said that several nuns in Rome married. Augustine came forth in defense of the orthodox principles and practices of the ascetics, endeavoring by argument to reconcile them with reason and Scripture, and Jerome followed in the same defense. Underneath his heresy there seems to have been a healthy protest against asceticism, but all our knowledge of him comes from Jerome's violent "Adversus Jovinianum," *Nicene and Post-Nicene Fathers*, vol. vi (2d series, New York, 1893). Consult Adolf Harnack, *History of Dogma* (Boston, 1894-1900).

JOVIUS, PAULUS. An Italian humanist and historian. See GIOVIO, PAOLO.

JOWETT, jou'ët, BENJAMIN (1817-93). A distinguished English scholar and educator. He was born in London and educated at St. Paul's School and at Balliol College, Oxford, where he was elected to a fellowship before he took his degree in 1839, and to a tutorship in 1842, which he held until he became master in 1870. He was ordained deacon in 1842 and priest in 1845. His religious views, originally evangelical, were disturbed by the excitements of the Oxford movement and especially by daily intercourse with W. G. Ward, also a fellow of Balliol. He was carried in the direction of Roman Catholicism for a time, but a reaction set in which took him far into liberal theology. The publication in 1855 of his edition of the Epistles to the Thessalonians, Galatians, and Romans, with the accompanying essays, raised a storm of protest; and when in the same year he was appointed to the regius professorship of Greek, his opponents made a strong manifestation against him and succeeded for 10 years in preventing him from receiving the full income of the office. His essay on the "Interpretation

of Scripture," published in *Essays and Reviews* (1860), committed him still more definitely to the Broad Church movement. His most important and formative work, however, was done as master of Balliol from 1870 until his death, and as vice chancellor of the university from 1882 to 1886; an extraordinary personal influence over his pupils, many of whom occupied later the foremost places in English public life, and a broad conception of the functions of the college and the university enabled him to do much towards shaping the life and thought of his generation. He never aspired to be the leader of a school either in religion or in philosophy, but in many ways, as when he launched T. H. Green upon the study of Hegel, he affected the movements of others. His translations of Plato, Thucydides, and of the *Politics* of Aristotle, especially the rendering of Plato, are recognized masterpieces of English. The admirably written *Introductions* in the translation of Plato did much to popularize the study of Plato in England and elsewhere, the notes and essays in the edition of the *Republic* of Plato have scholarly value. On Jowett's classical scholarship, consult Sandys, *A History of Classical Scholarship*, vol. iii (Cambridge, 1908). Two volumes of sermons appeared in 1899 and 1901 and of theological essays in 1906 and 1907. Consult: Ward, W. G. *Ward and the Oxford Movement* (London, 1889), Tollemache, *Benjamin Jowett, Master of Balliol* (ib., 1895), his *Life and Letters*, by Abbott and Campbell (2 vols, ib., 1897), and *Letters* (ib., 1899), essays in A. C. Swinburne, *Studies in Prose and Poetry* (ib., 1894), and Leslie Stephen, *Studies of a Biographer*, vol. ii (ib., 1898), a biography by Evelyn Abbott, in *Dictionary of National Biography*, supp. vol. iii (London, 1901).

JOWETT, JOHN HENRY (1864-). A British-American clergyman. Born at Halifax, England, he was educated at the University of Edinburgh (M.A., 1887) and at Oxford (1887-90), and was minister of St. James's Congregational Church, Newcastle-on-Tyne (1890-95), and afterward, until 1911, of the Carr's Lane Church, Birmingham. In 1910 he served as president of the Free Church Council. He came to the United States in 1911 to be pastor of the Fifth Avenue Presbyterian Church, New York, where, widely noted for his preaching, he had one of the largest congregations in the country. The degree of D.D. was conferred upon him by Edinburgh in 1910 and by New York University in 1911. His writings include: *From Strength to Strength* (1898, new ed., 1909); *Meditations for Quiet Moments* (1899; new ed., 1906); *Apostolic Optimism, and Other Sermons* (1901; 7th ed., 1909); *Brooks by the Traveler's Way* (1902); *Thirsting for the Springs* (1902); *The Passion for Souls* (1905); *Epistles of St. Peter* (1905); *The High Calling* (1909); *The Transfigured Church* (1910); *The Preacher: His Life and Work* (Yale Lectures, 1912); *Things that Matter Most* (1913); *My Daily Meditation* (1914).

JOWF, jowf, or **DJOWF**. An oasis in the northern part of Arabia, between the Shammar and the Syrian deserts (Map: Asia, F 5 and 6). It has a fertile and well-watered soil, producing dates and other southern fruits. The population is estimated at 40,000. The chief settlement, El-Djof or Djowf-Amir, contains about 500 dwellings and is surrounded by a stone wall. East of El-Djof lies Sekakah, with about

600 dwellings and fine gardens. Jowf is also the name of a district in southern Arabia to the east of Yemen.

JOY, CHARLES ARAD (1823-91). An American chemist, born in Ludlowville, N. Y., and educated at Union College and at the law department of Harvard College. He studied at the universities of Berlin and Göttingen and in 1852 received from the latter the degree of Ph.D. After further study in Paris he returned to America and occupied the chair of chemistry at Union College until 1857, when he was called to a similar position at Columbia, where he remained for 20 years. He was a member of many scientific societies, was in 1866 made president of the Lyceum of Natural History (which developed into the New York Academy of Sciences), contributed to many periodicals, and was one of the editors of the *Scientific American* and the *Journal of Applied Chemistry*.

JOY, THOMAS (1610-78). An American colonist. He was born in Norfolk County, England, came to America in 1635, and settled in Boston, where for many years he was an architect and builder. He took part in the "Child Memorial" agitation of 1646 against the civil and ecclesiastical system of Massachusetts, and after suffering fines and imprisonment, along with his associates, he lived until 1657 at Hingham, after which he again lived in Boston. In 1657, also, he built the town house of Boston, the first important public edifice in New England.

JOYCE, ISAAC WILSON (1836-1905). An American Methodist Episcopal bishop. He was born in Coleraine Township, Ohio, and was educated at Hartsville College. He joined the Northwest Indiana conference of his church in 1859, subsequently being transferred to the Cincinnati conference. He was elected bishop in 1888. In 1892 he had episcopal supervision of the work in Europe, in 1896-97, with residence in China, he supervised all the mission work of China, Japan, and Korea, and in 1903 and 1904 he made episcopal tours of South America. He was president of the Epworth League of the entire church from 1900 to 1904. Consult W. F. Sheridan, *Life of Isaac Wilson Joyce* (New York, 1907).

JOYCE, ROBERT DWYER (1836-83). An Irish-American poet and physician, born in Limerick County. He was educated there and in Dublin, where he went to practice, and where, while practicing, he also taught English literature. In 1866 he emigrated to Boston and published afterward *Legends of the Wars in Ireland* (1868), *Fireside Stories of Ireland* (1871), *Balads of Irish Chivalry* (1872; New York, 1908), *Bland* (1879); but his best poem is the epic *Deirdré*, issued in the "No Name Series" (1876).

JOYEUSE ENTRÉE, zhwa'yēz' ān'trā' (Fr., Joyous Entry). An ancient provincial charter of privileges of Brabant, which every duke from the time of Wenceslas, in 1355, was obliged to ratify before his entrance into the capital. John III, Duke of Brabant, having lost his sons, wished to have his daughter and her husband, the Duke of Luxembourg, inherit all his property—Brabant, Antwerp, Limburg, etc. The nobles of Brabant finally agreed, but secured this charter, in 1353, in return, guaranteeing to them a voice in all important matters, freedom of commerce, and certain judicial rights. The abrogation of the Joyeuse Entrée by Joseph II (q.v.) in 1789 led to an uprising in the Austrian Netherlands. It was ratified for the last

time by Emperor Francis II in 1792. Consult Poullet, *Origines, développements, et transformations des institutions dans les anciens Pays-Bas*, vol. ii (Louvain, 1892).

JOYNES, joinz, EDWARD SOUTHEY (1834-). An American educator. Born in Accomack Co., Va., he graduated M.A. from the University of Virginia in 1853. He became professor of languages at William and Mary College in 1858 and from 1866 to 1875 held a similar chair at Washington College (now Washington and Lee University). After three years at Vanderbilt University and five in the University of Tennessee, he became professor of French and German in the University of South Carolina, retiring as professor emeritus in 1908, after 26 years of service. He was editor of a series of modern language textbooks, of which the *Joynes-Meissner German Grammar* (1887) is best known.

JUAN, hwān, DON. See DON JUAN.

JUAN DE FUCA, STRAIT OF. A passage separating the State of Washington, in the United States, from Vancouver Island. It connects the Pacific Ocean with the Strait of Georgia on the north and Puget Sound on the south (Map: Washington, A 2). It is important as the water route from Vancouver and the Puget Sound cities to the Pacific Ocean. It extends eastward for about 50 miles, with an average width of about 10 miles, and thence east-northeastward for 30 miles, with an average width of over 18 miles, then on the north with Georgia Strait through the channels of Washington Sound, and on the south through Admiralty Inlet with Puget Sound. The shores are heavily wooded and usually bold and rugged. The Strait contains several islands in its eastern part, one of which (San Juan) became the subject of a dispute between Great Britain and the United States, the question being whether it was to be regarded as an appendage of Washington Territory or of British Columbia. The question was submitted in 1872 to the Emperor of Germany as arbiter, and he decided that the line of boundary should be run through the Strait of Haro, west of San Juan, thus awarding that island to the United States. Juan de Fuca, a Greek mariner whose real name was Apostolos Valerianos, asserted that he had discovered this strait and navigated it for 20 days. His claim (which is related in *Purchas His Pilgrimages*) was false, but the name has persisted.

JUANES, VICENTE OF JUAN DE. See MACIP, VICENTE JUAN.

JUAN FERNÁNDEZ, fēr-nān'dās (called also MĀS-Ā-TIERRA) A group of small islands in the Pacific belonging to the Province of Valparaíso, Chile (Map. World, Western Hemisphere, N 12). It consists of the larger islands of Juan Fernández, or Mās-ā-Tierra (36 square miles), about 360 miles west of the city of Valparaíso; Mās-ā-Fuera (33 square miles), about 96 miles west of Mās-ā-Tierra, and the rocky islet of Santa Clara, off the west end of Mās-ā-Tierra. The islands are of volcanic origin. The highest point in Mās-ā-Tierra is the Anvil (the anvil), 3225 feet; a peak in Mās-ā-Fuera is said to be over 6000 feet high. The larger islands are fertile and well wooded and differ remarkably in their flora and fauna from the mainland. The flora is particularly notable for a very large number of different species. The climate, which is not unhealthful, is similar to

that of Valparaíso, but much more humid; crops of grain are easily raised, and excellent fruits are produced. The inhabitants, however, are not very prosperous, their number is less than 100, and they are chiefly engaged in cattle raising. The islands were discovered by Juan Fernández in 1571. During the sixteenth and seventeenth centuries the group was a resort for buccancers. In Mās-ā-Tierra Alexander Selkirk, a Scottish buccaneer, lived in solitude for four years (1704-08). His story is supposed to have suggested the *Robinson Crusoe* of Defoe. Mās-ā-Tierra was formerly used by the Chilean government as a penal station. A wireless-telegraphy station was erected here in 1914.

JUANG, joo-ling', or PATUN. A primitive people of Kolarian (q.v.) stock of the Cuttack country, dwelling about the mouth of the Mahanadi River in northern Orissa. They are considered by some authorities to be the most primitive tribe in Hindustan.

JUAN VERDE. See JOHNNY VERDE

JUÁREZ. See CIUDAD JUÁREZ

JUÁREZ, hwā'rēs, BENITO PABLO (1806-72). A President of the Republic of Mexico. He was born at Guelatao in the State of Oajaca, March 21, 1806, being the child of Indian parents, who died when he was four years old. His education was taken in hand by a charitable merchant of Oajaca, who made it possible for him to graduate at the seminary in that town, after which he studied law, and was admitted to the bar in 1834. He was appointed judge of the civil court in 1842, and secretary to the Provincial Governor in 1845. Meanwhile revolution and counter-revolution had succeeded one another in the little State of Oajaca, which in 1846 resumed its sovereignty and placed the executive authority in the hands of a triumvirate, which included Juárez. Shortly after the restoration of the federal constitution, in the same year, Juárez was elected to the Constituent Congress and in 1847 was chosen Governor of Oajaca. His administration was, in the true sense of the term, an era of reform. The finances were put upon a sound basis, necessary public works were carried out, and the economic condition of the state improved by the development of its mineral resources. When Juárez left office in 1852, Oajaca was probably the most prosperous state in Mexico. Upon Santa Anna's return to power (1853) Juárez was exiled in revenge for a refusal to lend himself to the dictator's purposes some years earlier. He spent the next two years in great poverty in New Orleans. The revolution against Santa Anna in 1855 made possible his return to Mexico. He joined the revolutionists under General Alvarez, who, upon becoming President, made Juárez Minister of Justice and Ecclesiastical Affairs. In this capacity he brought about the enactment of a law, known by his name, which suppressed the military and ecclesiastical tribunals and with them all privilege in army and Church. Upon the resignation of Alvarez, in December, 1855, Juárez retired from office, but was named by Comonfort, the successor of Alvarez, provisional Governor of Oajaca, being subsequently chosen to this position by an overwhelming majority. He resigned in 1857, to become Secretary of the Interior and Chief Justice—the latter office being by the terms of the constitution equivalent to the vice presidency of the nation.

On the overthrow of Comonfort, in January, 1858, by the party of reaction, Juárez succeeded

to the presidency and was recognized by all the Mexican states. The Conservatives, however, took the field, and Juárez was compelled to flee to Guanajuato and then to Guadalajara, finally establishing the seat of government at Vera Cruz, where he arrived May 4 by way of Acapulco, the Isthmus of Panama, Havana, and New Orleans. In virtue of his executive authority, he had set up a cabinet, and he proceeded to issue decrees embodying the reforms which had been instituted by Comonfort. His government was recognized by the United States. In the civil war which ensued Juárez's authority was for a time reduced to the city of Vera Cruz, but finally the Liberals gained the upper hand. Juárez's rival, General Miramón, was defeated at Calpulalpam, Dec. 22, 1860, and on Jan. 11, 1861, Juárez entered the city of Mexico. In March he was elected President for four years. Trouble, however, was at hand. The government was bankrupt. Even the confiscation of Church lands failed to remedy the situation, and the decree of July 17, 1861, suspending payments on the foreign debt for two years, led to the allied intervention of France, England, and Spain in December, 1861, and January, 1862. An agreement to protect the interests of foreign debtors led to the withdrawal of the English and Spanish troops; but France was aiming at nothing less than the establishment of a Mexican empire for the Austrian Archduke Maximilian (qv) in the interest of the Napoleonic dynasty, already seeking to strengthen its hold upon the French people by a brilliant foreign policy. Juárez obtained a loan from the United States, and fought the invaders with bravery and skill. On May 31, 1863, however, he fled from Mexico to San Luis Potosí before the victorious French. Step by step, in spite of a determined guerrilla warfare, he was forced to withdraw towards the north to Saltillo, to Monterey, to Chihuahua, and finally in August, 1865, to El Paso del Norte on the United States frontier. Maximilian had in the mean while proclaimed himself Emperor, but at this point the United States government, having established peace at home, found itself free to interfere in behalf of Juárez, whose claims had been from the beginning persistently recognized at Washington. Upon the representations of the United States the French troops were withdrawn (January–March, 1867), and the Republicans immediately succeeded in turning the course of events in their own favor. Maximilian was captured and shot (June 19, 1867), and two days afterward the national troops under Porfirio Díaz entered the capital. Elections were held in December, and Juárez once more became President of the Republic. His administration, however, was harassed by constant attempts at revolution. In 1871 he was reelected to the presidency, but the difficulties of the situation seemed rather to increase than to diminish. Díaz, who had been a candidate for the presidency in 1867, and again in 1871, raised the standard of revolt, and a formidable opposition rose up against Juárez. In the midst of these difficulties he died (July 18, 1872). His distinctive characteristics seem to have been a tremendous will power and the cold impassibility which marks his race in the presence of danger. The sincerity and utility of his reforms, both civil and judicial, are universally recognized. Consult an account of Juárez given in Bancroft, *History of Mexico*, vols. v and vi (San Francisco, 1889–90), also

an excellent biography by Burke, *A Life of Benito Juárez* (London, 1894), Francisco Bulnéo, *Juárez y las revoluciones de Ayutla y de Reforma* (Mexico, 1905).

JUAREZ CELMAN, *hwá'ras sél-mán'*, MIGUEL (1844–). A president of the Argentine Republic, born at Córdoba, Argentine Republic. He studied at the university there, became Governor of Córdoba Province, and was elected a senator in the National Congress in 1884. He was a member of the Córdoba clique which played an important rôle in Argentine history and in 1886 was elected by this group to the presidency of the Republic for six years. During his administration speculation in railways and other properties and inflation of the currency terminated in the disastrous financial panic of 1890. Opposition to his administration was carried on by the Union Civic, which was formed for this purpose, and in 1890 a revolution broke out in Buenos Aires. After some desultory fighting, Juárez Celman was obliged to resign in favor of the vice president, Pellegrini.

JU'BA. A river in East Africa, about 1000 miles long, formed by the junction of three main head streams—the Ganana, the Web, and the Daua—and flowing southeastward, constituting the boundary between Italian Somaliland and East Africa Protectorate (Map Africa, J 4). It enters the Indian Ocean at the town of Kisumu, close to the equator. There is a dangerous bar at its mouth. The stream is of uneven flow, but is navigable to 20 miles above Bardera, where the waters range from 4 to 12 feet deep. The country of the lower Juba is generally level and arid, but is irrigated in districts to yield rice, cotton, etc. Little was known of its head streams until the last decade of the nineteenth century. The Ganana is formed by the Ganale Gudda and the Ganale Guracha. The former rises at a high elevation in lat 7° 30' N. and long 39° E, in south Abyssinia. The Web has its source in the Worgoma Mountains.

JUBA, *ᵢᵒᵒ'ba* (Lat., from Gk. *Ἰόβας, Iobas*). The name of two African kings whose history is associated with the contest between Cæsar and Pompey and the earlier years of Augustus' reign. 1. King of Numidia, who sided with the party of Pompey and in 49 B.C. cut to pieces a Roman army under Curio, a friend of Cæsar. He then aided the Pompeian leaders, Scipio and Cato; but when the battle of Thapsus destroyed all their hopes (April 6, 46 B.C.), Juba committed suicide. 2. Son of the preceding, taken to Rome as a boy by Cæsar and well educated there. Octavius (afterward Augustus Cæsar) restored to him the kingdom of his father in 30 B.C. and gave him a daughter of Antonius and Cleopatra as his wife. Five years later, when Numidia was made a Roman province, Juba was compensated with the Kingdom of Mauretania, where he ruled until his death in 19 B.C. He was the author of works on a wide variety of subjects, including works on philological matters and on Assyrian, Libyan, and Roman history, and on the history of painting, all of which are lost. Consult Sandys, *History of Classical Scholarship*, vol. ii (Cambridge, 1908), and the article "Juba," in Lübker, *Reallexikon des klassischen Altertums* (8th ed., Leipzig, 1914), with rich bibliography.

JUBÆA (Neo-Lat., from *Juba*, ancient King of Numidia). A genus of palms of the same tribe as the coconut. *Jubæa spectabilis*, a native of Chile, sometimes attains a height of 60

feet and has a wide-spreading crown of pinnate leaves. This is cut off to obtain the sap, which flows freely for several months if a fresh slice of the top be cut off each morning. A good tree will yield 90 gallons of sap, which when boiled down to a thick sirup receives the name of *muel de palma* (palm honey) and is an important article in the domestic economy of the country. The *Jubaea* is the jaggery palm of Chile. The nuts are edible, and the tree is useful in a number of other ways. It is also known as coquito palm. See CARYOTA.

JUBAINVILLE, zhū'bān'vel', MARIE HENRI D'ARBOIS DE (1827-1910) A French historian and Celtic philologist, born at Nancy. He was educated at the Collège Royal of Nancy and at the University of Königsberg. He became an advocate at Paris in 1850, served as archivist of the Department of the Aube from 1852 to 1880, and was appointed professor of Celtic language and literature at the Collège de France in 1882. He was made an Officer of the Légion d'honneur and a member of the Académie des Inscriptions et Belles-Lettres in 1884. After 1886 he edited 20 volumes of the *Revue Celtique*. His publications include: *Études sur les abbayes cisterciennes* (1858), *Répertoire archéologique du département de l'Aube* (1861); *Histoire des ducs et comtes de Champagne* (7 vols., 1859-66); *Cours de littérature celtique* (12 vols., 1883-1902), with others, *Éléments de la grammaire celtique, déclinaison, conjugaison* (1903), *Les Celtes depuis les temps les plus anciens jusqu'en l'an 100 avant notre ère* (1904), *La famille celtique* (1905); *Les Druides et les dieux celtiques à forme d'ammaux* (1906).

JUBBULPORE, jū'būl-pōr' See JABĀLPUR.
JUBBULPORE HEMP. An East Indian fibre plant. See CROTALARIA.

JUBERNA, or **JUVERNA**. See HIBERNIA.

JUBILATE, jū'bi-lā'tē or yōō'bē-lā'tā (Lat., make a joyful noise). 1. A name given to the third Sunday after Easter from the opening words of the Sixty-sixth Psalm used in the mass on that day. 2. In the Church of England and the Protestant Episcopal church, the One Hundredth Psalm used as a chant in the morning service immediately before the Creed.

JU'BILEE (OF. *jubile*, Fr. *jubilé*, from Lat. *jubilans*, from Heb. *yōbēl*, blast of a trumpet). An occasion of extraordinary spiritual privileges in the Roman Catholic church. The name and the fundamental idea are borrowed from the old Hebrew custom (See JUBILEE, YEAR OF). The principal characteristic of the jubilee is the solemn offering to the faithful of a plenary indulgence (see INDULGENCE) on conditions of confession, communion, and visits to specified churches. This is limited, except in special cases, to pilgrims to Rome. An extraordinary jubilee is proclaimed, as a rule, for a short period and may be either for the whole church or for definite localities. The ordinary jubilees, which now occur every 25 years, are proclaimed first for Rome, lasting a year, and then for the rest of the world during the following year. The beginning of the jubilee is marked by the opening with great solemnity of the "holy door" in St. Peter's, where the Pope officiates, while three legates perform a similar ceremony at the churches of St. John Lateran, Santa Maria Magi-giora, and St. Paul Without the Walls. This takes place after the first vespers of Christmas, and the doors are closed again in like manner a year later. Besides the plenary indulgence,

special privileges are given to confessors to absolve penitents from all sins (with one small group of exceptions), even those usually reserved to the Pope or bishops, and to commute or sometimes to dispense from simple vows.

The origin of this observance is traced to Pope Boniface VIII, who issued, for the year 1300, a bull granting a plenary indulgence to all pilgrims coming to Rome during that year, on condition of their penitently confessing their sins and visiting the church of St. Peter and St. Paul, 15 times if strangers and 30 times if residents of the city. The invitation was accepted with marvelous enthusiasm. Innumerable troops of pilgrims from every part of the world flocked to Rome. Giovanni Villani, a contemporary chronicler, states that the constant number of pilgrims in Rome, not reckoning those who were on the road going or returning, during the entire year never fell below 200,000. As instituted by Boniface, the jubilee was to have been held every hundredth year. Clement VI, in compliance with an earnest request from the people of Rome, abridged the time to 50 years. His jubilee accordingly took place in 1350 and was even more numerously attended than that of Boniface, the average number of pilgrims until the heat of summer suspended their frequency being 100,000. Matteo Villani, no fewer than 100,000. The term of interval was still further abridged by Urban VI and again by Paul II, who in 1470 ordered that henceforth each twenty-fifth year should be held as jubilee—an arrangement which has continued ever since to regulate the ordinary jubilee. Paul II extended still more, in another way, the spiritual advantages of the jubilee by dispensing with the personal pilgrimage to Rome and granting the indulgence to all who should visit any church in their own country designated for the purpose, and should, if their means permitted, contribute a sum towards the expenses of the holy wars. In later jubilee years the pilgrimages to Rome gradually diminished in frequency, the indulgence being for the most part obtained by the performance of the prescribed works at home, but the observance itself has been punctually maintained at each recurring period, with the single exception of the year 1800, in which, owing to the vacancy of the holy see and the troubles of the times, it was not held. Consult Loiseaux, *Traité canonique et pratique du jubilé* (Tournai, 1859), De Waal, *Das heilige Jahr* (Rome, 1900), Thurston, *The Holy Year of Jubilee* (London, 1900).

JUBILEE, YEAR OF An institution ordained for the Hebrews in Lev. xxv. 8-55, by which every fiftieth year (i.e., on the completion of seven sabbatical years) the land that in the interval had passed out of the possession of those to whom it originally belonged was restored to them, and all who had been reduced to poverty and obliged to hire themselves out as servants were released from their bondage; there was also a remittance of debts (Josephus, *Ant.*, iii, 12, 3). The jubilee forms an exalted sabbatical year (q.v.), and the land was to be left completely to itself in the former as in the latter, without sowing or reaping of any kind or even gathering grapes. The design of this institution was chiefly the restoration of the equilibrium in the families and tribes. It was to prevent the growth of an oligarchy of land-owners and the total impoverishment of some families. It was proclaimed at the end of the

harvest time, like the sabbatical year, on the tenth day of the seventh month—the Day of Atonement—by the *yobel* (a kind of horn); hence also its name. While the detailed specifications are to be found only in Lev. xxv. 8 ff., there are references to the jubilee year elsewhere (Lev. xxvii 17–25; Num. xxxvi. 4; also Jer. xxxiv 14; Ezek. xlv. 17) sufficient to indicate that there existed some institution in early days of which the jubilee is the theoretical elaboration. For an agricultural community it is of importance that land should remain in the hands of the tillers, and one can well conceive that even in primitive communities some regulations existed to bring this about. To this economic provision there was added also the religious consideration that the land belongs to the deity residing in it, and to whom the fertility is due, and this furnished an additional reason why the land should not be made an object of commercial speculation. Still, in the elaborate form mapped out in Lev. xxv 8 ff the jubilee was never observed either in the pre-exilic or postexilic period of Hebrew history. The rabbis themselves admit that the jubilee had not been practiced since the time when the tribes on the eastern side of the Jordan were carried away, and this is practically equivalent to saying that it was never held to. It is also significant for the postexilic period that when the sabbatical year was de facto repealed by Hillel's *prosbol* (a legal document entitling the creditor to claim his debt during this period), mention is no longer made of the yobel. It is needless to point out that the system as laid down in Leviticus was only a theoretical development of the underlying principle. If carried out, it would mean two years of no sowing, no reaping—since the fiftieth year would be preceded by a year, the forty-ninth, which would be a sabbatical year and this would imply a third year without a harvest. This consideration is sufficient to show how utterly impossible its observance was. Consult commentaries on Leviticus by Dillmann, Strack, and Baentsch, and the Hebrew archaeologies of Nowack (Göttingen 1907) and Ben-zinger (2d ed., Tübingen, 1907).

JUBILEES, BOOK OF. See APOCALYPTIC LITERATURE

JUCH, yook, EMMA (1863–) A dramatic soprano, born of American parents in Vienna, Austria. Educated in music under Madame Murio-Celli, a teacher of New York, she made her operatic debut in London in 1881 and on her return to America was received cordially. In 1884 she was the prima donna of Theodore Thomas's American opera company, afterward organizing a company of her own. In 1894 she married J. L. Wellman, of New York, and retired from the stage.

JUCHEREAU, zhush'rô, LOUIS (called also BARBE), SIEUR DE SAINT-DENIS (1676–after 1731). A French-Canadian soldier, born at Quebec. He went to Louisiana, where he became known as a soldier and a negotiator with the surrounding Indians. In 1700 he was placed by Iberville in command of the fort at the mouth of the Mississippi. In 1714–16 he was in Mexico, where he was unsuccessful in concluding with the Viceroy a treaty of commerce. He commanded an Indian force at the defeat of the Spaniards at Dauphin Island in 1719 and in 1720 was appointed governor of Fort Nachitoches. This fort having been besieged by the Natchez Indians in 1731, he made an attack which re-

sulted in the complete defeat of the enemy and the death of most of their war chiefs.

JUDÆ'A. See PALESTINE.

JU'DAH (Heb. *Yehūdāh*, probably 'praised'). The fourth son of Jacob and Leah (Gen. xxix 35), eponymous ancestor of the tribe of Judah. He is represented as originating the idea of selling Joseph into Egypt instead of killing him (Gen. xxxvii 26–27) and taking a prominent part in the events that followed (xliii. 3 et seq., xlv. 16 et seq.). He forms a marriage alliance with a Canaanitish woman, by whom he becomes the father of Er, Onan, and Shelah; he was also the father of Pharez and Zarah by his daughter-in-law Tamar (xxxviii). The stories in Genesis about Judah are considered by many scholars as in part the remnants of obscured tribal struggles and alliances, in part legends to which a lesson has been attached. When Judah is portrayed as suggesting the idea of selling Joseph, this incident is interpreted by them as reflecting the culmination of rivalries between Hebrew clans. Originally these rivalries may have existed between Judah and the Joseph tribe in Goshen southwest of the Negeb of Judah, later they revealed themselves between the tribes Ephraim and Manasseh, who were in some way connected with Joseph (q.v.) and Judah. The favorable light in which Joseph is depicted in Genesis may in part be due to the influence of story-tellers and writers in Israel, but it is also evident that the stories have been recast with a view of removing features that reflect too seriously on Judah, and so the latter and Reuben are depicted as seeking to save Joseph from his jealous brothers. The alliance of Judah with a Canaanitish woman is held to be a bit of tribal Judah tradition, accounting for the admixture of Canaanitish elements in the clan. It is not until the days of David that the Judah clan comes into prominence, and the boundaries of the clan as described in Joshua xv are supposed by some scholars to apply to the post-Davidic age. But according to the Book of Joshua, Judah extended eastward to the Dead Sea and westward to the Mediterranean, including the Philistine plain. As there is no period in the history of Judah from David until Hasmonæan times when the Philistine cities were a part of Judæa, the boundary must therefore be regarded either as ideal, implying an empty claim, or else as referring to an earlier time than that of the Philistine invasion (c.1200 B.C.). It is not impossible that Judah struggled with the Awwim and the Afri (cf. W. Max Müller, in *Orientalistische Literaturzeitung*, June, 1913), who perhaps, in spite of the different guttural may be identical with Ephraim, in the Philistine plain before the invasion by the Cretans. But positive evidence of this is as yet lacking. In the north Judah bordered on Benjamin's territory, while the southern limit is represented simply by a line drawn westward from the southern extremity of the Dead Sea. Till David's time the tribe of Judah appears to have been also to a great extent isolated from the tribes of Israel, due in part to the mountainous nature of the Judæan territory and in part to a different origin, or at least a very marked admixture of foreign elements. The kingdom of Judah which David formed consisted of Jerahmeelites, Kenites, Kenizzites, and other tribes, mostly of Idumæan origin, as well as of members of the original tribe of Judah. David (q.v.) succeeded in obtaining control of Israel after

the death of Saul, and Jerusalem, captured from the Jebusites, becomes henceforth one of the great centres of Jewish history. Israel chafed under the southern yoke, and after the death of Solomon again became independent of Judah. Consult: Winckler, *Geschichte Israels* (Berlin, 1895); Ed. Meyer, *Die Israeliten und ihre Nachbarstämme* (Halle, 1906); Haupt, in *Studien* . . . Wellhausen gewidmet (Giessen, 1914).

JUDAH I (c.175-219). Son of Simon II and compiler of the Mishna (q.v.). While a youth, he was admitted to the Sanhedrin on account of his extraordinary knowledge of Jewish law and on his father's death was made its president. Through his knowledge and wealth he succeeded in transferring the whole power of the Sanhedrin to himself. He settled in Sephoris, which during his lifetime became a centre of religious and learned activity. His great knowledge earned him the unique dignity of being quoted simply by his title, Rabbi, and he was further distinguished by the appellation of Ha-Nasi (the prince). After his death he was spoken of as Ha-Kadosh (the holy). The compilation of laws made originally as a textbook for his lectures acquired such authority that it became a permanent standard and formed the basis of the great compilation known as the Talmud.

JUDAH, or JEHUDA (Ar. *Abu'l-Hasan*) (**BEN-SAMUEL**), surnamed **HA-LEVI** (c.1086-?). A Jewish physician, poet, and philosopher of Spain. He was born in Castile and first studied medicine, but afterward devoted himself to philosophy and poetry and became the greatest Hebrew poet of the Middle Ages. His songs breathe a constant longing for Jerusalem, the home of his race; and about 1140 he left his college at Toledo to journey to the city of his lays. The date and manner of his death are unknown; according to tradition, he was slain by a Moslem while singing his song of Zion. In the field of philosophy his chief work is *Al-Khazari*, written in Arabic, in which, in the form of a dialogue, the current tenets of Aristotelianism, Christianity, Islam, and finally Judaism are explained to Bulan, King of the Khazars. The work has little theological or philosophical depth and betrays the essentially poetic mind of its author. It has been translated from the Hebrew version of Jehuda ibn-Tibbon into German by Cassel (2d ed., Leipzig, 1869), and more successfully by Hirschfeld from the original Arabic (Breslau, 1885), who also published the Arabic text with the Hebrew translation of Jehuda ibn-Tibbon (*Das Buch Al-Chazari*, Leipzig, 1887). Ha-Levi's poems have been translated into German by Sachs, *Religiöse Poesie der Juden in Spanien* (Berlin, 1845); Geiger, *Divan des Castilers Jehuda Halevi* (Breslau, 1851); Heller, *Die echten hebraischen Melodien* (Trier, 1893). Some of them are found in English in Emma Lazarus' Poetical Works, vol. ii (Boston, 1899), and Nina Davis, *Songs of Exile* (Philadelphia, 1901). The poems of Jehuda ha-Levi are remarkable for their pure Hebrew diction, their exalted sentiments, and their fervor. Consult David Kaufman, *Jehuda Halevi* (Breslau, 1877).

JU'DAH BEN-SAMUEL (?-1217 A.D.). A Jewish moralist and mystic. He was born in Speyer, but in 1195 moved to Ratisbon, where he founded a school and had many famous pupils. His family had come from the East and settled in Germany; among his ancestors

were some well-known cabalists. Many works have been ascribed to Judah which probably were written by other men. A commentary on the Pentateuch is known only by citations in later commentaries. *Sefer ha-Kabod* (the Book of the Divine Majesty) is regarded as a genuine production of his pen. His most important work is *Sefer Hasidim* (the Book of the Pious), of which the best edition is that by Wistinetzki (Berlin, 1891-93). It contains reflections on morality, and ascetic and mystical sentences. Only the first 26 sections are regarded as coming from Judah. Judah and his school made a distinction between the divine Being which is superior to all human perception and the divine Majesty which is revealed to men and angels. He was not a great thinker, like Ibn-Ezra and Maimonides; but his writings reveal a noble character, lofty aspirations, and an ardent desire to discover the deepest truths set forth in the Bible. Consult Zunz, *Literaturgeschichte der Synagogalen Poesie* (Berlin, 1864), Grätz, *Geschichte der Juden*, vol. vi (3d ed., Leipzig, 1894); Schleiermacher in *The Jewish Encyclopedia* (New York, 1901).

JUDAISM. See JEWS; ZIONIST MOVEMENT.

JUDAIZERS, *yū'dā-iz'ēz*. A name given to certain of the early converts to Christianity who wished to retain the rites and ceremonies of the Jewish law, particularly circumcision. They were Jews in race and appear to have been of two classes—some considering the law as binding only on Christians who were also Jews, others wishing to make it obligatory on Gentile converts also. The Apostolic Council (see JERUSALEM, COUNCILS OF) decided against the latter view. These Christians were particularly hostile to Paul and were opposed by him with much warmth, especially in the letter to the Galatians. Owing to his influence and the increasing number of Gentile converts, they became less and less important and finally disappeared. See EBIONITES, NAZARENE, PAUL.

JUDAS THE APOSTLE. One of the Twelve Apostles, mentioned only by Luke as the eleventh in both his lists (Luke vi. 16, Acts i. 13). He is probably to be identified with the Thaddæus of Mark iii. 18 and the Lebbaeus, surnamed Thaddæus, of the King James Version of Matt. x. 3 (see THADDÆUS), and with Judas, "not Iscariot," of John xiv. 22. The name of his father (not "brother," as in the King James Version) was James (q.v.). Nothing certain is known of Judas beyond the fact that he was one of the Twelve, and as one of that circle nothing is recorded of him beyond the question contained in the above passage in John—a question which would seem to indicate that he shared in the Nationalist views of contemporary Judaism, which looked for an earthly Messianic kingdom whose establishment would extend to the non-Jewish world. He is not to be identified with Judas the brother of the Lord, for the latter could not fulfill the conditions of eligibility to the Twelve required by Acts i. 21, 22.

JUDAS THE LORD'S BROTHER (named JUDA in the King James Version of Mark vi. 3). One of the brothers of Jesus (Matt. xiii. 55; Mark vi. 3). With the other brethren of Jesus—James, Joses, and Simon—he was not a believer in the Messiah until after the Resurrection (John vii. 5; cf. Mark iii. 21 with 31; Acts i. 14). Beyond the hints that he was in Jerusalem after the Ascension (Acts i. 14) and was a married man (1 Cor. ix. 5), nothing is

known of him in the New Testament, unless, with tradition, supported by some scholars, the Epistle of Jude (q.v.) be ascribed to him. As to the discussion whether he was a full or half brother or a cousin of Jesus, see BRETHREN OF THE LORD, THE.

JUDAS BAR'SABBAS (from Heb. *Yehūdāh*, Judah, and Aram. *Bar*, son, and possibly *shabbta*, sabbath, although other equivalents are possible). A member of the Jerusalem church, who with Silas was the bearer of a decree from the Apostles and elder brethren to the brethren in Antioch, Syria, and Cilicia (Acts xv. 22-33). He is described as a man of eminence and a prophet. Further than this, nothing is definitely known of him. That he was a brother of Joseph Barsabbas is only an inference.

JUDAS ISCARIOT, is-kār'i-ot. One of the Twelve Apostles of Jesus, and the one who betrayed Him, as the Evangelists are wont to add when they mention his name. Iscariot (properly Iscarioth) means 'man of Kerioth.' But the place referred to is uncertain; it may have been in the southern part of the territory assigned to Judah, the Kerioth-Hezron, or Hazor of Josh. xv. 25, the modern *Karjetan*, south of Hebron; or it may have been the Kerioth of Amos ii. 2, Jer. xlviii. 24, the *Kir-Moab*, or *Ar*, the capital of Moab; less likely is it the modern *Kurawa*, the *Korew* of Josephus (*Ant.*, xiv, 3, 4), on the northeastern border of Judaea. The father of Judas was named Simon (John xiii. 2) or Simon Iscariot (John vi 71; xiii 26).

Judas was the only one of the Twelve not a Galilean, and his name is put last in all the lists. In the oldest Gospel (Mark) there is no open suspicion against him, or any reference to the position he held among the Twelve, prior to the time of the betrayal. Just before the Last Supper, however, Mark states that Judas, one of the Twelve, went to the high priests to deliver Jesus to them, and when they heard this proposal they rejoiced and promised to give him money, and he began to seek how he might conveniently deliver Him up (xiv. 10, 11). At the supper Jesus predicts that one of the number is to betray Him, but no name is mentioned. After Gethsemane Judas, at the head of an armed force, comes to Jesus and gives Him a kiss, a prearranged sign by which the crowd identifies Jesus (xiv. 43-50). With this kiss Judas passes out of history for the oldest narrative. The other two Synoptists, Luke and Matthew, who here as elsewhere follow in general the narrative of Mark, add, however, at this point new material to the earliest tradition, chiefly of an interpretative character. Luke interprets Mark's promise to give money as an agreement after consultation with the high priests and temple officers, to which Judas assents; and attributes the treason, moreover, to the entrance of Satan into him (xxii. 3-6). Matthew likewise interprets Mark's promise as an agreement and makes Judas say to the priests, "What are ye willing to give me and I will deliver him unto you?" The result of the parleying is that they weigh out or pay him 30 pieces of silver (xxvi. 14-16). Both these details, the immediate payment and the exact amount of money, are preserved only in Matthew. In this Evangelist's narrative of the Last Supper Judas is named as the traitor in the following words: "Is it I, Rabbi? He saith unto him, Thou hast said" (xxvi. 25). Coming to the fourth Evangelist, we find that it is he

alone who indicates any suspicion against Judas before the betrayal. As early in his narrative as vi. 70, Jesus is recorded as saying, "Did I not choose you the twelve, and one of you is a devil?" But nowhere is there reference to money in connection with the betrayal, although it is suggested, in passing, that Judas was the treasurer of the Twelve (xiii. 29). The Evangelist does, however, distinctly ascribe the act of treason to devilish or satanic influence (xiii. 2, 27). In his record of the Last Supper he states that when Jesus had washed the disciples' feet, He predicts His betrayal at the hands of him to whom He gives the bread and bitter herbs dipped in the sauce used at the meal, and after serving Judas with the morsel, He bids him do quickly what he has to do, whereupon Judas, evidently stricken with the consciousness that his purpose was known to the Master, leaves the room to complete his treacherous undertaking (xiii 21-30). To the narrative of the arrest of Jesus in a place well known to Judas, the Evangelist adds further details, but omits the traitor's betraying kiss. Then for John, as for Mark, Judas passes out of history (xviii. 1-8). Two accounts preserved—one by Luke (Acts i. 16-20) and the other by Matthew (xxvii. 3-10)—show the violent death of Judas and the name of the field, *Aceldama*, but reveal differences in the matter of the purchase of the land, the land bought, the reason for the name Field of Blood, and the motive of the story. A still later tradition is the gruesome tale of Papias, which narrates that Judas first tried death by hanging, but was rescued, that later he died a horrible death in his own field.

In view of the criticisms, both ancient and modern, directed against the historicity of the betrayal by Judas, and in view of the divergences in the Gospel narratives, it may be well to call attention to certain facts. It is generally admitted that the Gospel of Mark is the oldest of the Gospel narratives written by a friend and companion of the three prominent missionaries—Peter (an eyewitness of the betrayal), Paul, and Barnabas. In accord with his usual habit to state facts as he knows them and not to make inferences, Mark gives a simple, circumstantial narrative of the betrayal, with not a word about the motives of Judas. In favor of the essential historicity of Mark's narration it is to be remembered that the story is embedded in the oldest tradition, that it is narrated objectively, that it accounts for the sudden disappearance of Judas and the election of Matthias, and that it is the kind of story that no Christian would ever think of inventing. The later Evangelists, as is their habit, introduce reflections and interpretations into their narratives, and give details according to individual inclinations and the purpose they had in view in writing. While Mark states only the facts of the betrayal, with no reflection on the motive and no emphasis on a money agreement with the priests, the later Evangelists add, along with other details, that there was a definite stipulation for a money consideration (Matthew and Luke); that the deed was due to satanic influence (Luke and John) or avarice (Matthew) or both (Luke). Beyond these two hints the Gospels are silent as to motives. Matthew alone records the tradition that exactly 30 pieces of silver were paid, because to him the 30 pieces were the fulfillment of prophecy (Zech. xi. 12, 13, quoted as if from Jeremiah).

Luke is interested in the explanation of the name Aceldama, and further in the death of Judas as preparing the way for the election of Matthias. The narrative of the death of Judas has at least this amount of fact—that Judas not simply disappeared, but met a violent death.

In view of the mystery involved in Jesus' apparent knowledge beforehand of the character of Judas and his treacherous purpose, various attempts have been made to show that he had really no criminal motive in his plan. In the days of early Gnosticism it was held that Judas was, as a matter of fact, possessed of a higher spirituality than his fellow Apostles and brought about Jesus' death because he knew it would destroy the power of the spirits of evil and the rulers of this world. Others have held that his act was that of one who firmly believed in Him and expected, as the result, to behold Jesus triumphantly establish himself as King—a consummation no doubt ardently desired by many of Jesus' followers. In more recent times it has been suggested that the act of Judas may have been prompted by a desire to place Jesus in a crucial position where He would be forced to save Himself by the exercise of supernatural power. On this view the betrayal was a bold attempt to apply a decisive test to the claim of Jesus as the Messiah. These views, however, are the product of a theological desire to solve the problem of Jesus' relation to the situation and have nothing in any of the narratives to support them.

JUDAS MACCABÆUS. The hero of the Jewish war of independence waged against the Syrian kings in the second century B.C. He was one of five brothers, all distinguished for bravery and skill, sons of Mattathias, a priest of the order of Joarib, whose home was at Modin, a town about 18 miles northwest of Jerusalem. When a detachment of the troops of Antiochus Epiphanes, in the attempt to uproot the Jewish faith, in 168 B.C., reached Modin, Mattathias slew the King's officer, raised the standard of revolt, and with his sons fled to the mountains. At his death, shortly after, he committed the cause to his sons, appointing Judas their military leader. The surname of Judas was Maccabæus (1 Macc. iii. 1), commonly supposed to mean 'the Hammerer,' though this is by no means certain. Judas was, after David, the greatest of Israel's military heroes. With a few thousand followers he defeated four Syrian armies in succession, two of them immensely superior to his own in numbers, and was able, in December, 165 B.C., to restore the Jewish worship at the temple, which had been discontinued for three years. The memory of this event was commemorated in the annual eight-day Feast of Dedication on the 25th Chislev (November-December). From now on until his death Judas was the virtual head of the Jewish people, though he bore no official title. He did not assume the office of high priest as his brother Jonathan did later. Extensive campaigns were undertaken against enemies of the Jews on all sides. The Edomites to the south, the Ammonites to the east, the Arabs, and other people were conquered or punished for maltreatment of Israelites. On the death of Antiochus Epiphanes (164 B.C.), Lysias, guardian of the young Antiochus V, invaded Judæa with an army of 100,000 men and advanced to Jerusalem, after a vain attempt by Judas to check his progress. But

troubles at Antioch compelled Lysias to retire, and Judas took advantage of the opportunity to secure Syrian recognition of the religious liberty of the Jews. This accomplished, Judas worked towards political independence. To this end he dispatched an embassy to Rome proposing an alliance, hoping thereby to secure Judæa against further subjection. The answer came too late, for dissensions among the Jews and the intrigues of the pro-Syrian party had proved fatal to his plans. Though he won a glorious victory over the forces of Demetrius I of Syria, under Nicanor (163-162 B.C.), he was unable to rally the full strength of the Jews against a second Syrian army, and died in battle against hopeless odds at Elasa (161 B.C.). He was buried in the family sepulchre at Modin and succeeded by his more shrewd and political brother, Jonathan (q.v.).

Bibliography. The main sources of information are 1 and 2 Maccabees and Josephus' *Antiquities*, xii. Of these the narrative in 1 Maccabees is the most reliable. Consult: Stade, *Geschichte des Volkes Israel* (Berlin, 1888); Emil Schürer, *History of the Jewish People in the Time of Jesus Christ* (5 vols., New York, 1896); H. Weiss, *Judas Makkabæus* (Freiburg, 1897); Streane, *The Age of the Maccabees* (London, 1898); Wellhausen, *Israelitische und jüdische Geschichte* (Berlin, 1898).

JUDAS MACCABÆUS. An oratorio by Handel (q.v.), first produced in London, April 1, 1747; in the United States, Dec. 5, 1847 (Boston).

JUDAS OF GALILEE. Leader of a Jewish uprising against the Romans. According to the only mention of him in the New Testament (Acts v. 37) he appeared at the time of the census and carried away the people with him, but himself perished, while all his followers were dispersed. Probably he is to be identified with the Judas of Galilee (or Gamala) of Josephus (*Ant.*, xviii, 1.). This Judas, along with Sadduk, resisted the taking of the census under Quirinius (6-7 A.D.), instigated the people in the name of religion to riot and revolution, but met with little success. Josephus does not record his death, but narrates that his two sons, Jacob and Simon, were later put to death.



JUDAS TREE.

JUDAS TREE (*Cercis*). A genus of trees of the family Leguminosæ, named from the tradition that Judas hanged himself on one of them. The common Judas tree of Europe (*Cer-*

ois siliquastrum), a native of the south of Europe and of the warmer temperate parts of Asia, has almost orbicular, very obtuse leaves, and rose-colored flowers which precede them. The American Judas tree (*Cercis canadensis*), a hardy tree, which may reach a height of 40 feet, is very similar, but has acuminate leaves. The flower buds of both species are frequently pickled in vinegar. Both species furnish a black-veined, strikingly beautiful wood, which takes an excellent polish. A third species (*Cercis occidentalis*) occurs in the western United States, and one has been introduced from Japan (*Cercis chinensis*). All the species flower early in the spring and are very handsome in shrubbery.

JUDD, CHARLES HUBBARD (1873-). An American psychologist and educator. Born at Bareilly, British India, he came to the United States in 1879 and graduated from Wesleyan University in 1894. Two years later he took his Ph.D. at Leipzig. He taught philosophy at Wesleyan University (1896-98), was professor of psychology at New York University (1898-1901) and at the University of Cincinnati (1901-02), and served as instructor (1902-04), assistant professor (1904-07), and professor of psychology and director of the psychological laboratory (1907-09) at Yale University, where he directed also the Summer School in 1906 and 1907. In 1909 he became professor of education and director of the School of Education at the University of Chicago. He was president of the American Psychological Association in 1909. Besides translating Wundt's *Outlines of Psychology* (3d ed., 1907), he published *Genetic Psychology for Teachers* (1903); *Psychology—General Introduction* (1907); *Laboratory Manual of Psychology* (1907); *Laboratory Equipment for Psychological Experiments* (1907).

JUDD, GERRIT PARMLEE (1803-73). An Hawaiian statesman, born at Paris, N. Y. He went as missionary physician to the Hawaiian Islands in 1828, with the second body of missionaries sent out from the United States. In 1842 the King induced him to accept a government position, though, in order to do so, he was forced to sever his connection with the mission. From that time until 1853, when he was compelled by popular jealousy to retire, he was one of the most conspicuous figures in Hawaiian politics. He was largely responsible for the organization of a constitutional government in the islands and at various times held different ministerial offices, the duties of which he discharged with so much ability that he became virtually the ruler of the country.

JUDD, NORMAN BUEL (1815-78). An American lawyer and politician, born at Rome, N. Y. He was educated at the high school in his native city and in 1836 was admitted to the bar. He immediately removed to Chicago, Ill., where he began practice, drew up the first charter of the incorporated city in 1837, and was elected its first city attorney. He was county attorney for Cook County in 1839 and in 1844 was elected to the State Legislature, of which body he remained a member by successive reelections until 1860. Originally a Democrat, he allied himself with the Republican party in 1856, was a delegate to the Philadelphia Convention in that year, and became chairman of the Illinois State Central Committee of the party. He held this position when the second Republican National Convention convened in Chicago in 1860, and to

the adroit political management of Judd, Joseph Medill, and Leonard Swett is probably due, as much as to any other one thing, the nomination of Lincoln for the presidency. In 1861 he was appointed by President Lincoln Minister to Prussia, where he remained until 1865 and successfully exerted his influence to prevent the recognition of the Confederacy. Having returned to America in 1865, he was elected to Congress in 1868 and served two terms. He was one of the committee of managers of President Johnson's impeachment on the part of the House. The most important legislation of which he was the author was the act creating inland ports of entry and providing for shipment of goods in bond into the interior of the country. In 1873 he was collector of United States customs at Chicago. For 20 years before his death the best-known railway lawyer in the country, he was closely connected at one time or another with the development of most of the great Western trunk lines.

JUDD, ORANGE (1822-92). An American agricultural journalist, born near Niagara Falls, N. Y. He graduated at Wesleyan University in 1847, was editor of the *American Agriculturist* from 1853 to 1883, agricultural editor of the *New York Times* from 1855 to 1863, editor of the *Prairie Farmer* from 1883 to 1888, and afterward of the *Orange Judd Farmer*. For many years he exerted a marked influence on the agricultural progress of the United States, and largely through his efforts and financial aid the first State agricultural experiment station was established in 1875 at Middletown, Conn., in the Orange Judd Hall of Natural Sciences, which about that time he had donated to Wesleyan University.

JUDD, SYLVESTER (1813-53). An American clergyman and author, born at Westhampton, Mass., July 23, 1813; died at Augusta, Me., Jan. 26, 1853; a son of Sylvester Judd (1789-1860), the antiquary. Judd, who was brought up in the orthodox faith of New England, was sent to Yale College, whence he was graduated in 1836. Soon after leaving Yale he changed his religious opinions and entered the Cambridge (Mass.) Divinity School, was graduated in 1840, and thereupon became pastor of a Unitarian church in Augusta, Me., where he remained until his death. While a divinity student, he wrote *A Young Man's Account of his Conversion from Calvinism*. He was author also of *Margaret: A Tale of the Real and Ideal* (1845), a romance which had some vogue, being highly praised by Lowell and containing some good descriptions, although a very uneven performance; a chaotic Unitarian dramatic poem, entitled *Philo: An Evangeliad* (1850); another romance, *Richard Edney and the Governor's Family: A Rus-Urban Tale* (1850), a parallel tale to *Margaret*; and *The Church: In a Series of Discourses* (1857). He also lectured on social questions, particularly against intemperance, slavery, and war. He wrote also a *History of Hadley* (new ed., 1905). Consult his *Life and Character*, by Hall (Northampton, Mass., 1882).

JUDE. See **JUDAS THE LORD'S BROTHER.**

JUDE, EPISTLE OF. The last of the 21 Epistles of the New Testament. It is both an exhortation (vs. 3) and a reminder (5) to the beloved readers in view of the presence in their churches of ungodly men who deny Christ as the Lord and are full of lust. The reminder (5-19),

based on references to God's dealings with the ungodly in the past, is methodically arranged in five sections, in each of which the historical case is first stated and then followed by a clause introduced by the favorite apocalyptic "these," indicating the points of comparison between the present ungodly and those of the past, e.g., denial and lust. In these two main points they are like the people in the Wilderness, the fallen angels, and the Sodomites (5-8), but are unlike Michael, who did not blaspheme (9-10); they are like Cain the blasphemer, Balaam the lustful, Korah the denier, but are unlike nature, which follows the divine order (11-13), they are like the ungodly of Enoch (14-16) and the lustful mockers of whom the Apostles spoke (17-19). The exhortation (20-23) bids them not only to preserve themselves in God's love, by building themselves up by faith, prayer, and hope, but also to act aggressively, though lovingly, with the ungodly, to the end that those who are not too far gone may yet be saved. The contents reveal both in language and thought close affinities to apocalyptic literature, especially to Enoch (quoted in 14-15) and Assumption (Testament) of Moses (9), allusions to both of which books appear in almost every verse.

The emphasis on the denial and the lust of the ungodly reveals the presence in the churches of a mischievous tendency which in general may be called Gnosticism, i.e., a one-sided intellectualism which is chary of the ethical imperative. The theoretical aberration does not seem to have advanced so far as the Docetism of the Johannine and Ignatian Gnostics, but seems rather to be Antinomianism, the well-known and popular caricature of Paul's doctrine of freedom. At all events, it is the practical rather than the speculative heresy which receives the brunt of the author's serious denunciations. Unlike the Gnostics of John and Ignatius, who are simply separatists and individualists, caring nothing for brotherly love, these ungodly are both separatists (19) and gross materialists—lascivious, gluttonous (12), and avaricious (11, 16).

The author was on the point of writing a general homily on "our common salvation," but, on hearing of the conduct of the ungodly at the love feasts (12), writes instead the specific reminder and exhortation. Possibly, but not certainly, the people addressed are to be sought in Antioch of Syria, a theory which would account for their acquaintance with Paul and the Apostles, for the prevalence of Gentile vices, and for the apparently sudden appearance of the Gnostics. The style of the author is clear and methodical, influenced largely by the apocalyptic type, with which he is at home. His thought, though mainly Jewish-Christian in tone, is not uninfluenced by the Pauline Christianity. His ethical feeling, with its prophetic emphasis on mercy and love, is vigorous and wholesome. Were it not for the words "brother of James" in the first verse, we should be perplexed to know what Jude was meant, as there were many of that name in the first century. Assuming, however, the genuineness of the words, there is nothing in the rest of the letter which absolutely excludes the traditional ascription of authorship to Jude, the brother of the Lord; for the author still uses freely the Jewish apocalypses, and the Gnosticism is of an incipient, undeveloped character speculatively. There is no reference to the temple, no reference to persecutions. A date be-

tween 70-80 A.D. after Nero and before Domitian is not improbable. That Jude is earlier than 2 Peter may be confidently asserted. It is, however, an open question whether 2 Peter borrowed from Jude or both borrowed independently from a third unknown apocalyptic source.

Bibliography. Spitta, *Der zweite Brief des Petrus und der Brief des Judas* (Halle, 1885); Von Soden, *Handkommentar zum neuen Testament*, vol. iii, part ii (Freiburg, 1892); Kühl, *Die Briefe Petri und Judas* (6th ed., Göttingen, 1897); Zahn, *Einleitung in das neue Testament* (2d ed., Leipzig, 1900); Bigg, *A Critical and Exegetical Commentary on the Epistles of St. Peter and St. Jude* (New York, 1901); G. Hollmann, in J. Weiss, *Die Schriften des neuen Testament* (Göttingen, 1908); J. B. Mayor, in *Expositor's Greek Testament* (New York, 1910); also the full discussions by F. H. Chase, in Hastings, *Dictionary of the Bible*, vol. ii (ib., 1899), and James Moffatt, in his *Introduction to the Literature of the New Testament* (ib., 1911).

JUDEICH, yoo'dik, JOHANN FRIEDRICH (1828-94). A German forester, born at Dresden and educated in forestry at Tharandt and in political economy at Leipzig. He served in the Saxon and Bohemian forestry departments and in 1862 became head of the new school at Weisswasser, whence four years after he returned to Tharandt as director. His most important work is the textbook *Die Forsternrichtung* (8th ed., 1903). In addition he edited the seventh and eighth editions of Ratzburg's *Die Waldverderber und ihre Feinde* (1876, 1885-95), contributed to Lorey's *Handbuch der Forstwissenschaft* (1887-88), and edited the *Forst- und Jagd-kalender* (1882 et seq.) and the *Tharandter forstliche Jahrbuch* (1867-87).

JUDGE (OF., Fr. *juge*, from Lat. *iudex*, judge, from *ius*, law + *dicere*, to say). One who finds a judgment, especially a presiding magistrate in a court of justice. The proceedings of courts of justice may be: (a) to maintain the order of judicial procedure and make provision for the execution of judgments, (b) to find and interpret the legal rule or rules applicable to each case; (c) to determine what the facts in the case are, or at least what facts shall be taken to be proved.

While all these different functions frequently are discharged by a single authority, they frequently are separated. Representatives of the people, not otherwise connected with the administration of justice, are frequently charged with the decision of questions of fact and sometimes with the decision of questions both of fact and of law. This last separation was regularly made in the Greek democracies, in the Roman Republic, and in the early German tribes. A magistrate who was not simply a judicial officer, but who also had duties of general administration, including, in some instances, military duties—an archon or prætor or prince or hundredman—presided over the administration of justice, but judgment was rendered by representatives of the people—by dikasts or judges, or (among the Germans) by all the freemen. Contrary to our modern usage, the term "judge" was not regularly applied to the presiding magistrate, but to the representatives of the people who actually found the judgment. Among the Germans it was frequently applied to the wise men or law speakers, who suggested the judgment which the folk-moot approved or rejected. The term "judge" was not applied to the presid-

ing magistrate by the Romans until, in the Imperial period, he had become judge of the law and the facts. The term began to be applied to the presiding official by the Germans when he began (in the Frankish Empire) to obtain a considerable degree of control over the findings of the popular court. The relatively modern usage of describing the presiding magistrate as judge even when, as in English criminal procedure, he has no control over the judgment, is connected with the change which has separated judicial from general administration.

With the establishment of a separate and independent judiciary, placed beyond the reach of governmental interference, it has been found practicable, in all countries except those of the English law, to intrust to the judges the power of decision on the facts as well as on the law in civil cases. In criminal cases, however, the system of popular judgment has not only maintained itself in English law, but, after disappearing for centuries, has been reestablished on the continent of Europe. So recent, however, has been the introduction of the jury system in continental procedure that the inquisitorial traditions of the intermediate period are still strong, and the judge, to English eyes, seems to combine judicial functions with those of a public prosecutor. Cf. COURT, MAGISTRATE.

JUDGE, WILLIAM QUAN (1851-96). An Irish-American Theosophist, born at Dublin. He came to the United States in 1864 and with his father practiced law in New York City from 1872 to 1880. He then founded, with Madame Blavatsky and Colonel Olcott, the Theosophical Society of America, as secretary of which he traveled in South and Central America, the West Indies, and Europe. See THEOSOPHICAL SOCIETY.

JUDGE ADVOCATE. The prosecutor on a general court-martial or military commission. In the United States the Judge Advocate is usually detailed at the same time the authority for the convening of the court is issued and, in specially important cases, is a member of the Judge-Advocate-General's department. In the British army such duties devolve upon a specially detailed staff officer or the prisoner's commanding officer. In district or regimental court-martials the latter officer is usually represented by the regimental adjutant. The prisoner has the right to call on any regimental officer to speak in his behalf. See JUDGE-ADVOCATE-GENERAL; COURTS, MILITARY, MILITARY LAW, under which latter heading the duties of the Judge Advocate in courts-martial are discussed.

JUDGE - ADVOCATE - GENERAL. The head of the bureau of military justice in the United States army. He is the custodian of the records of all general courts-martial, courts of inquiry, military commissions, and of all papers relating to the title of lands under the control of the War Department, except the Washington Aqueduct and the public buildings and grounds in the District of Columbia. The officers of his department render opinions upon legal questions when called upon by the proper authority. The Judge-Advocate-General has the rank of brigadier general and is the legal adviser of the Secretary of War and of the War Department. A similar department exists in all European armies, that of England differing in that the Judge-Advocate-General is selected from among the high civil judiciary. See COURTS, MILITARY; MILITARY LAW.

JUDGES, BOOK OF (Heb. *Shōphētim*, Gk.

kplrai, kritai, Lat. *Liber Judicium*). A book of the Old Testament, recording the achievements of a number of leaders at different periods in the early history of the Hebrews, who in the book itself and elsewhere are called judges. (See JUDGES OF ISRAEL.) It cannot be said to be a history, properly speaking. The events recorded in it do not follow each other chronologically, nor is there any other order to be perceived in their arrangement. The contents of the book may be summarized as follows: 1. An introduction, giving an account of the invasion of western Palestine by the several tribes, their conquests and settlements, and the agreement reached with the Canaanites, continuing the narrative from Jos. xxiv. 28 (chaps. i-ii. 5). 2. Chapters ii 6-xii, an account of the deeds of a number of heroes: (a) Othniel ben-Kenaz, a Judæan, in conflict with Cushan-Rishathaim, King of Aram-Naharaim, (b) Ehud, a Benjamite, against Moab, (c) Shamgar against the Philistines; (d) Deborah and Barak against Sisera; (e) Gideon, the Manassite, against the Midianites; (f) Abimelech, son of Gideon, against the Shechemites; (g) Tola, of the clan of Issachar, (h) Jair, the Gileadite (Manasseh?); (i) Jephthah against the Ammonites; to whom are added Ithran, Elon (of Zebulun), and Abdon (chap. xii 8-15), probably representing clans rather than individuals. 3. Story of Samson and his exploits (chaps. xiii-xvi). 4. Chapters xvii-xxi, two narratives: (a) migration of the Danites and establishment of a sanctuary at Dan, (b) an altar committed upon a traveler by the Benjamites and the revenge taken upon the tribe by a combination formed against it. The stories of Eli and Samuel, who are by Jewish tradition counted among the judges, are told in the First Book of Samuel (q.v.).

A peculiar pragmatism is noticeable in this book. The history of the period is set forth in such a manner as to show the truth of the general thesis that obedience to the laws of Yahwe brings deliverance and prosperity, while foreign oppression and adversity are the signs of Yahwe's anger, caused by disobedience and idolatry. There is, therefore, a curious alternation between periods of foreign invasion and oppression and those of native victories and government by judges, corresponding to the religious attitude of the people. The twelve tribes of the Hebrew confederation are pictured as dwelling in the territory assigned to them by Joshua, but not united except in cases of emergency for self-defense. The loose union among the Hebrew clans is a part of the picture which corresponds to conditions as they existed before the days of Saul, and the two tales added to the Book of Judges (chaps. xvii-xxi) form valuable material for reconstructing a picture of the religious and social culture in the earlier period of Hebrew history. It is evident from these stories that the religious practices and ideas of the Hebrews did not differ materially from those of the surrounding nations. They correspond to the conditions presupposed in the earlier strata of the Pentateuch (q.v.) rather than to those clearly reflected in the later.

So far as the literary structure of the Book of Judges is concerned, it betrays the same composite character as the Pentateuch and Joshua. Some scholars have held that to a certain extent the same sources were used, and that especially the so-called Elohist and Yahwist (q.v.) were drawn upon. There is much to be said, how-

this judgment as in the judgment "Man is an animal," then the subject is the total object of thought which is expressed by the phrase given in the last sentence. This view of the case reduces all judgments, so far as concerns the relation between subject and predicate, to one type which since Kant's day has been called *analytical*. (See ANALYTIC JUDGMENT.) It does not deny the synthetical character of thought in judgment, but holds that the synthesis is all represented in the logical subject, while the analysis is represented, at least in part, in the logical predicate. According to this view, therefore, all judgments may be expressed in the following formula. A certain object of thought, which may be identified by a certain characteristic or complex of characteristics, is further qualified by the mark or marks signalized in the predicate. According to another interpretation of the function of the subject in such judgments, the subject is not the total complex within which the predicate is an element, but it is an object of thought of smaller connotation (q.v.), which the predicate extends by adding to its content. According to this view, some judgments may be expressed in the following formula. A certain object of thought which is expressed by a certain term is in synthesis with another object of thought expressed by another term. This view makes the relation between subject and predicate one of synthesis, and therefore classifies all judgments of this sort as *synthetical*. If concepts were fixed and immutable things, as many thinkers regard them, then the latter view alone would be tenable. But concepts are constantly changing, hence it is perfectly permissible to maintain, as the former view does, that in what are called synthetical judgments the predicate redefines and requalifies the subject. In other words, the synthetical: "... is: a posteriori, is a recognition of a "... of the object of thought. The judgment does not give to the subject new features, but recognizes them as having already appeared in the subject and as therefore necessitating a new analysis. This is true even of Kant's a priori synthetical judgments, i.e., judgments which, it is alleged, combine different conceptions independently of experience. It is a misrepresentation to say that the combination is independent of experience. Peripherally originated experience (= experience due to sense stimuli acting upon the outer and not the brain end of sensory nerves) may indeed have never contained certain elements in certain combinations, yet we may think them as so combined. But we must remember that all experience is not peripherally originated. We have many experiences, e.g., of memory and of fantasy, which are centrally originated. In many such experiences combinations of objects take place pari passu with acts of judgment, but it is important to distinguish between the formation, i.e., the conscious appearance, of such combinations and the analysis of them in "... Now, since we can thus distinguish between the formation and the analysis of combinations, we ought in the interests of clear thinking to avoid calling the formation by a name that historically has been the specific term to designate only this analysis. The word "judgment," therefore, is improperly applied to the so-called acts of synthesis. Judgment, strictly so called, never synthesizes, but always analyzes; but that analysis always presupposes a synthesis, i.e., an appearance of a complex in

consciousness. If, however, by synthesis is meant an act of combining what at first appears out of combination—a meaning which seems to prevail in Kant's works—then analysis does not presuppose synthesis. Sometimes, it is true, elements appear temporarily apart from each other and then subsequently appear in combination; but this is not always the case, and it is convenient to use the word "synthesis" in the sense, not of a subsequent combination of elements at first separate, but of a conscious apprehension of elements in combination. Now the question arises. If synthesis thus defined does not always involve judgment, does it not always involve thought? The answer depends upon the meaning of the word "thought." If one defines the term as Hegel did, viz., as the consciousness of objects in relation, then of course, by the very definition, the question is answered affirmatively. If, on the contrary, one defines thought as Lotze did, viz., as a comparing and judging activity, then the question must be answered negatively. Lotze's polemic against Hegel on this point was due to an entire misunderstanding of Hegel's position. We may gather up the results of this discussion of the nature of the logical subject by saying that it is the complex object of thought recognized in the act of judgment as containing within its complexity the element "... predicate. The logical copula is a function of the fact that the element functioning as predicate is included within the complex functioning as subject. In other words, the copula of any judgment is that element in the act of judgment which differentiates it from a mere envisaging of a complex without analysis of it; it is the act of analysis of a recognized synthesis.

An objection which at first sight seems to bear hard against this description of the function of judgment and of the element- "... is that it reduces judgment to "... we judge of "the house which I saw yesterday and which was burned down this morning" that it did burn down this morning, we have made no advance, it is claimed. The objection, however, confuses "... thought with the verbal expression of "... there is some exceptional reason for repetition of the expression of some distinct element in the complex object of thought, such repetition is idle. But when one recognizes a complex object of thought as constituted of certain features, this is not tautology. A recognition and expression of the actual state of facts is not a tautology, but a truth. It will be observed that so far nothing has been said to the effect that the subject is always a noun substantive with its qualifiers, the predicate, an adjective or some adjectival word or phrase; while the copula is always some part of the verb to be. The reason for this omission is that such a statement, so far as it is true, is a matter of language, not of logic. But not all of it is true. Not to speak of "... in which there are no adjectives as "... from verbs or from substantives, the copula is always expressed by the whole sentence, not by some part of the verb to be or its equivalents in other languages, except in those few cases where some part of that verb is the whole sentence, e.g., *est* in Latin.

The relation between judgments and concepts may be stated thus: No concept (q.v.) can be formed without an act of judgment. Such a concept as that of cat, e.g., is the result of pre-

vious judgments which recognized within certain complex objects of thought certain constant elements. The first objects of thought that appear in the history of any thinker are without doubt individual percepts. Subsequently we have individual objects of memory, of imagination, etc. The comparison of such objects with each other results, when they are alike, in a judgment which predicates of these objects similar qualities. Our concepts are such similar qualities or complexes of qualities as are thought to characterize various individual objects. Thus the concept cat is that complex of qualities which, it is judged, characterize in common the various individual cats. These conceptual elements do not exist in consciousness in separation from the other qualities which go to make the individual percepts, remembered objects, etc. They are merely distinguished from these other qualities. A concept once formed by an act of judgment may be made the basis upon which further judgmental operations are conducted. Thus, once equipped with the concept cat, a scientist may proceed to various zoological judgments about feline characteristics which the ordinary man knows nothing about. Thus, we see that concepts always result from judgments, but many judgments result from the fact that we have previously formed concepts. Judgment is related to reasoning in the following manner: as thought becomes more developed, judgments are made which are recognized as being true because other judgments are true. This complex intellectual process in which a judgment is made and is likewise judged to rest upon the truth of some other judgment is called reasoning.

Judgments are usually divided into three classes: singular, particular, and universal. Singular, or better individual, judgments are those in which the subject is some single object of thought, e.g., this cat. Universal judgments are those in which the predicate is asserted to qualify not only the single object or the several similar objects which psychologically function as subjects, but *all* similar objects, though not present in consciousness at the time of judgment. Thus, in the judgment "All material bodies gravitate," I may have in mind only the image of two individual objects moving towards each other, and may in the judgment be actually analyzing out of the complex image this movement towards each other and recognizing it as characterizing the complex. But this is not the whole of the matter. I recognize this analysis as good not only for this particular complex, but for all other complexes in which material objects are component elements. Such universal judgment is always the result of induction (q.v.). Particular judgments are either summaries of the results of several individual judgments or they are universal judgments in disguise. Thus, when we say "Some vertebrates are mammals," we may mean merely that in past experience we have had some individual percepts in which the character of mammalianism was a feature of vertebrate animals. Or we may mean that beyond the bounds of our past experience likewise there are some mammalian vertebrates to be found. In the latter case we are making an induction, and, if we expressed ourselves adequately, we should say all cats, dogs, horses, monkeys, etc., are mammals. The connection between the qualities of vertebrate-ness and mammalianism is not unconditional, but is conditioned upon the presence of other

qualities which are found only in dogs, etc., and not in fishes and the like. Either because we do not know the qualities or do not care to name them, we say "some vertebrates."

Consult: Kant, *Kritik of Judgment*, translated with introduction and notes by J. H. Bernard (New York, 1892); Jerusalem, *Die Urtheilsfunktion* (Vienna, 1895); Marbe, *Experimentelle-psychologische Untersuchungen über das Urtheil* (Leipzig, 1901); Ruyssen, *Essai sur l'évolution psychologique du jugement* (Paris, 1904); Kant, *Critique of Aesthetic Judgment*, translated with seven introductory essays by J. C. Meredith (Oxford, 1911); H. L. Hollingsworth, *Experimental Studies in Judgment* (New York, 1914); M. R. H. King, *Judgment* (ib., 1911); and the authorities referred to under Logic.

JUDGMENT. An intermediate or final determination or adjudication of the rights of the parties to an action or proceeding by a court of justice. Where it determines some of the rights of the parties, but is incomplete because all the questions raised by the issues are not settled or the extent of the relief fixed or defined, a judgment is called interlocutory, as there is something reserved for future determination. For example, if A sues B and the court determines as a matter of law that A is entitled to recover, but the accounts are so complicated that the court finds it necessary to direct a reference and an accounting to determine the exact amount due, an interlocutory judgment directing recovery and accounting will be rendered, and after the amount due has been reported by the referee, a final judgment for such sum will be entered. Several codes of procedure have abolished the use of the term "interlocutory judgment" and designate as an order every direction or determination of the court which is not a final disposition of the action. Under the common-law practice, however, there is a distinction in that an order, as distinguished from a judgment, does not settle any principal question in controversy, but merely some point of practice or some question collateral to the main issue.

A judgment is final when it disposes of or concludes an action so that it is at an end, even though it does not settle all of the rights of the parties. It is usually rendered at the end of the trial of an action, but may be entered upon a default in pleading or as a result of the nonappearance of, or abandonment of the action by, either party, or on a confession of judgment.

In its more technical sense the term "judgment" applies only to the adjudication of a court of law, the term "decree" being employed to describe the determination of a cause by a court of equity. (See DECREE; EQUITY; CHANCERY, COURT OF.) Under most codes of procedure where the former material variances in practice in law and equity have been abolished, the term "judgment" is now generally used to designate the final determinations of the courts in all cases, both in law and equity, but both courts and attorneys constantly use the term "decree" as a matter of description in the older and more accurate sense. Judgments are distinguished from *findings* (see FINDING) of fact or law, in that the latter are only formal expressions of the conclusions of a judge or referee and do not award relief.

Judgments are usually entered or docketed in the office of the clerk of the court in which they are rendered. This consists of an entry of a

brief description of the judgment, containing the names of the parties, designating the successful party, the date of recovery, the date docketed, and the amount awarded therein. The book in which this entry is made is called the docket of judgments, and is a public record, accessible for examination by any person who cares to examine it. If an execution is issued, the return of the sheriff, whether it be satisfied, meaning collected, or settled, or *nulla bona* (no goods) or unsatisfied, is entered opposite the description above referred to.

By statute in most jurisdictions a judgment, after being docketed, becomes a lien on the real property of the judgment debtor. It is subject to all valid prior liens existing at the time it was docketed, but takes precedence over all subsequent liens of any character except those for obligations to the municipal, State, or Federal government, such as liens for taxes and assessments. The public docket gives legal notice of the lien to all persons, just as the record of a mortgage operates, and any intending purchaser who omits to search for judgments against the owner of the property in question does so at his peril, even though he has not actually learned of the judgment, as he is deemed to have constructive notice of all matters of public record. This lien is usually restricted to the jurisdiction of the particular court in which it is rendered, unless a transcript or brief description of the judgment is obtained from the clerk and filed in another jurisdiction in the same State, usually another county, in which case its force is extended to that county. The duration of this lien is usually fixed by statute, otherwise it continues as long as the judgment is in force, unless waived by the judgment creditor. (See RELEASE; ACCORD AND SATISFACTION.) In most States by statute there is a legal presumption that a judgment is satisfied after the expiration of 20 years, but usually it is provided that this may be rebutted by proof to the contrary.

Where a judgment is void or voidable because of lack of jurisdiction of the court, or because of fraud or some irregularity it may be opened and set aside on motion of the judgment debtor. Where it is obtained by reason of a default in pleading or appearance, or by mistake of either party, the court may in its discretion vacate it, direct the proper pleadings to be served or filed, and permit the cause to proceed to trial on the merits. This is usually granted on terms, such as payment of costs by the party applying for the relief.

A judgment may be assigned by an instrument in writing, and the assignee will take all the rights and remedies of the judgment creditor. It will also descend as a part of the assets of a deceased owner. Upon payment of the amount of the judgment and accrued interest the judgment debtor is entitled to a satisfaction piece. See APPEAL; FINDING, OPINION; REPORT; RES JUDICATA. Consult: A. C. Freeman, *The Law of Judgments* (4th ed., San Francisco, 1892); H. C. Black, *The Law of Judgments* (2d ed., St. Paul, 1902); J. R. Rood, *Leading and Illustrative Cases, with Notes, on the Law of Judgments* (2d ed., Ann Arbor, 1909).

JUDGMENT, FINAL. The ultimate trial of the human race when judgment will be passed upon all men according as their works have been good or evil. The present order of things will be brought to an end, and a new dispensation inaugurated. The idea of a coming de-

struction of the world by fire is found among many peoples. (See ESCHATOLOGY.) It was especially developed among the ancient Indo-European nations. The worshipers of Ahura Mazda believed that this world-consuming fire would destroy only the wicked, while the good would pass through it unscathed. With this judgment there associated itself gradually in Mazdayasnian thought the expectation of a Saoshyant (the Messiah) who would raise the dead. (See SAOSHYANT.) The various elements of this Persian eschatology found their way into Jewish and Christian speculation. That the conception of the ordeal by fire was thus transplanted is evident from the *Sibylline Oracles*, ii, 252 et seq., viii, 411; Lactantius, *Div. Inst.*, vii, 21, 6; and the same is true of the coming of the Messiah with flaming fire, the resurrection of the dead, and the connection of the Messiah with this resurrection. But these foreign ideas found acceptance because they could ally themselves with already existing tendencies of thought. In ancient Israel the day of a battle which decided the fate of a nation was called a "day of Yahwe" While popularly this day was looked upon as bringing deliverance or victory to Israel, the great prophets before the Exile who on moral and religious grounds regarded the destruction of Israel and Judah by the Assyrians or the Babylonians as inevitable, saw in it a day of judgment upon their people for its sins. In this sense the term is used by Amos and Zephaniah, and the conception is found in Hosea, Isaiah, Micah, and Jeremiah. After the Exile judgment was naturally expected upon the arrogant world power that oppressed the Jews, and the "day of Yahwe" became the day when He would punish the nations and deliver His people. Signs of its coming were eagerly looked for. In Joel the Day of Judgment is preceded by great calamities. The apocalypse of Daniel, written 165 B.C., depicts a scene of judgment in heaven. Thrones are set for the celestial court; the demonic representative of the Græco-Macedonian power in the shape of a chaos monster is condemned, and the angelic representative of Israel in the form of a man receives the Empire. Towards the end of the second century B.C. the judgment upon the angels who sinned by marrying beautiful women (see ANGEL) and the angels of the nations already occupied much attention, as is seen in the older parts of the Book of Enoch and in the apocalypse preserved in Isaiah xxiv-xxvii. As the notion of a celestial judgment thus linked itself to the earlier ideas of a retribution and a change of power on earth, so the new doctrines of a resurrection and a Messiah connected themselves with earlier speculations (see RESURRECTION; MESSIAH), and the grand conception of a universal judgment was formed. It is doubtful whether the step was ever taken in Judaism of ascribing the final judgment and the resurrection to the Messiah. On the other hand, the Persian idea of an ordeal by fire and an emergence of a new heaven and a new earth from the final conflagration may have come through Judaism to Christianity. If the Messiah's kingdom was regarded as of limited duration, the judgment was thought of as following it (Psalter of Solomon). Where the Greek doctrine of immortality (q.v.) was accepted rather than the idea of a resurrection, the judgment of each individual was regarded as occurring immediately after death,

and there was no thought of a general judgment (Wisdom of Solomon; Philo). In the New Testament different views are represented. Whether Jesus himself believed in a final judgment cannot be ascertained. His view of the resurrection (q.v.) renders it improbable. The Evangelists connect the last judgment with His *parousia*, or appearance upon the clouds. The scene of the last assize in Matthew xxiv is remarkable by the emphasis put upon moral conduct, the nations being judged not by their religious beliefs, but by the manner in which they have treated some of their fellowmen, viz., the Christians. The Epistle of Jude follows the teaching of the Book of Enoch on this subject. Second Peter reflects the Persian conception of a world conflagration. James expects the coming of the Messiah to judge the world. The Epistles to the Thessalonians present the thought of a final judgment connected with the *parousia*, when Antichrist and the godless Jews and Gentiles will be destroyed. In other Pauline Epistles "the day of the Lord Jesus Christ" is described as the time when Christ shall return and render unto all men according to the deeds wrought in the body. In the Epistle to the Hebrews, however, the judgment follows immediately after death, and the conception of the future is that characteristic of Alexandrian thought. The same is true of the Johannine writings, in which the current idea is allegorically interpreted and referred to the already existing distinction between the followers of the light and those remaining in darkness. In the ecumenical creeds of Christendom the return of Christ to judge the quick and the dead maintained its place, and the importance of the final judgment was enhanced by the developing doctrine of a purgatory. The rejection of the doctrine by the Protestants tended to fix the eternal destiny of the individual at death; but as the resurrection was not assumed to take place before the final judgment, the latter event still retained some of its significance. The reviving chilastic speculation (see MILLENNIUM) had a tendency to find in the millennial reign of Christ and His saints on earth the judgment of the world. Swedenborg conceived of several final judgments at the end of the different dispensations—the Adamic, the Noachic, the Mosaic, and the first Christian, closing in 1759. Among those who adhere to the doctrine as set forth in the Christian creeds there is much difference of opinion as to the details of time, place, and circumstances. In the view of Catholic theologians a "particular judgment" is passed upon every soul at the moment of death, when the choice made by the human will is irrevocably fixed, and the sentence of God is passed in accordance with its choice. There is general agreement that the final judgment is pronounced upon assembled humanity, and includes in the basis of its award the consequences to the whole race of the acts of the individual. Its purpose is also partly the glorification of God by this public exhibition of His justice. The judge is Christ, not only in His divine but also in His human nature; this triumphant exaltation is considered as the complement of His humiliation to the death of the cross. The place is supposed to be the earth; the time, a secret in the counsels of God until it arrives. In scientific circles Herder's view that the history of the world is the judgment of the world is widely

prevalent. It is expected that the earth will some day become uninhabitable, and the life of the human race will cease, and that ultimately the planet will be destroyed by fire. But this disappearance of the earth is regarded as quite normal and without serious effect upon the life of the infinite universe. Consult: Bantz, *Weltgericht und Weltende* (Mainz, 1886); Charles, *Critical History of the Doctrine of a Future Life* (London, 1899); Söderblom, *La vie future* (Paris, 1901); Bousset, *Die Religion des Judentums im neutestamentlichen Zeitalter* (2d ed., Berlin, 1905). See ESCHATOLOGY; IMMORTALITY

JUDGMENT OF DANIEL. See SUSANNA, HISTORY OF.

JUDGMENT OF GOD. See ORDEAL.

JUDGMENT OF PARIS. See PARIS (in Greek legend).

JUDIC, zhū'dék', ANNA DAMIENS, MADAME (1850-1911). A French actress, born at Semur. In youth she was a shop girl in Paris, but entered the Conservatoire, and in 1867 made her début at the Gymnase. The following year, at the Eldorado, she quickly won a popularity which was increased by a visit to Belgium in 1871. Later she appeared at the Gaité and the Folies-Bergère and became a leading attraction at the Bouffes-Parisiens and the Variétés, where she created, among other rôles, Niniche, Mimi, Lili, and Mademoiselle Nitouche. In 1885-86 she went on tour and appeared in all the principal cities of Europe and the United States. After a period of retirement she appeared again as a café-concert singer in 1898.

JUDICATURE ACTS (Fr. *judicature*, from ML. *judicatura*, *judicature*, from Lat. *judicare*, to judge). The usual description of the important legislation of 1873, 1875, 1877, and 1881, whereby the judicial system of Great Britain and the procedure of the courts were radically altered and transformed. The acts comprehended in that designation are the 36 and 37 Vict., c 66, and 38 and 39 Vict., c 77, with amendments in 37 and 38 Vict., c 83, and in the Laws of 1877, c 9, and 1881, c 68. Most of the courts affected by this legislation were of great antiquity. The Court of Common Pleas (q.v.), the Court of King's (or Queen's) Bench (q.v.), the Court of Exchequer (q.v.), the Court of Admiralty (q.v.), the Court of Probate, and the Court for Divorce and Matrimonial Causes were all consolidated and were declared to constitute one Supreme Court of Judicature. This court was divided into two permanent divisions, one of which, Her Majesty's High Court of Justice, was invested with original jurisdiction of causes, together with appellate jurisdiction from certain inferior courts, which were not abolished; and the other, Her Majesty's Court of Appeal, was given such appellate jurisdiction as might be incident to the determination of any appeal. See COURT.

The most important change in procedure effected by the judicature acts was the provision that law and equity should be concurrently administered by the same court, and that equitable defenses should be allowed in legal actions. The distinction between legal and equitable remedies was not abolished, but the same judge or court was authorized to administer both kinds of relief. These provisions make the powers of the High Court of Justice quite analogous to those of the superior courts of original jurisdiction in many of the United

States under codes of procedure. A further important change in pleading and practice was the abolition of the old forms of action (q.v.). While all the elements constituting a legal claim or defense must be set forth in a pleading, the pleader is no longer confined to an artificial and arbitrary form as before, but is simply required to deliver to the defendant a concise statement of his claim and of the relief or remedy to which he claims to be entitled, or a brief statement of his defense, as the case may be.

A third important change in procedure was a provision that an absolute assignment of contract debts and other rights of action should be deemed to pass all legal and equitable rights and title thereto, provided that notice was given to the person liable, and that the assignee should have all legal and other remedies for the enforcement of such rights. This obviated the necessity which existed under the old practice, of an assignee of a right of action, as a claim for money due, suing in the name of the former owner thereof. By these acts all jurisdiction vested in the judicial committee of the Privy Council (q.v.) upon appeal from any judgment or order of the High Court of Admiralty, or from any order in lunacy proceedings made by the Lord Chancellor, or any other person having jurisdiction in lunacy, was transferred to and vested in the Court of Appeal. See CHANCERY, COURT OF; ECCLESIASTICAL COURTS, FORMS OF ACTION; PLEADING; PRACTICE.

JUDICIAL COMMITTEE OF THE PRIVY COUNCIL. See PRIVY COUNCIL, *Judicial Committee*.

JUDICIAL NOTICE. The recognition by a court of the existence, nature, or truth of something involved in an action, on the theory that it is self-evident, or that it is a matter of such common knowledge as not to require any proof to establish it. The doctrine originated in the civil law and has always existed in the English and American law. It is a rule founded on expediency and convenience, adapted to save time in the trial of an action. The questions as to what facts are matters of such universal knowledge or certainty as to warrant judicial notice being taken of them, rest largely in the discretion of the court, and this is exercised with great caution. In most jurisdictions, by statute, certain matters of both law and fact are required to be judicially noticed, such as the attestation of a copy of a public record by the proper officer under the great seal of the state, or that the publications of the state printer contain authentic copies of the public statutes, etc. In general it is the right and sometimes the duty of courts to take judicial notice of the following facts: the common law and public statute law, the public offices and officers, and the rules of the courts and matters of public record of their own state, the political constitution of their own state government and of the United States; the existence and title of every foreign state and sovereign recognized by the United States; public proclamations of the chief executive of the state or nation, and all matters of such universal acceptance that there can be no dispute in regard to them, such as the divisions of time into years, months, and days, etc. In the absence of statute, where a court has any doubt as to a fact involved in a trial, it has a right to and should require evidence tending to establish it to be introduced.

It is not essential, in order to take judicial notice of fact, that the trial judge should be personally familiar with it at the time of the trial, if before his decision he becomes convinced by his own investigation that it is a general fact never disputed by competent authorities, or where he learns of a statute affecting the case subsequent to the trial. A jury has substantially the same liberty as a court to take notice of matters of fact upon the same principles as govern the courts, but cannot take cognizance of a law without instruction from the court. Neither a court nor a jury can consider in their deliberations any personal knowledge they may have of the peculiar circumstances of a case, unless they are set before them in the evidence, as they are bound to decide solely upon the law and evidence as brought out in the trial. In any case where a court assumes something to be true without proof, either counsel may object and introduce evidence tending to contradict the conclusion of the court. If a court refuses to allow such evidence, the party who offered to introduce it may appeal on that ground; and if the appellate court finds that the trial court erred in this respect, it may reverse the judgment and order a new trial. See EVIDENCE; and consult the authorities there referred to.

JUDICIAL SEPARATION. The termination by judicial decree of the conjugal rights of husband and wife. Colloquially and to some extent in legal usage the term "divorce" has been applied to such a separation, as in the expressions "limited divorce" and "divorce *a mensa et thoro*" (from bed and board), but in strictness divorce is the final and complete dissolution of the marriage bond, sometimes distinguished from the so-called limited divorce by the term "absolute divorce." The right of husband and wife to such freedom from conjugal control was recognized even by the Church, which denied the possibility of a dissolution of a sacramental marriage, separations being granted for adultery and in rare instances for other grave causes. With the general recognition in the United States of the right of divorce for a variety of causes, judicial separation, once the only relief from an intolerable conjugal relationship, has largely lost its importance, though it is still frequently resorted to in England and in such of the United States as confine divorce within narrow limits.

The effect of a judicial separation is to destroy the *consortium*, or right of the husband or wife to cohabitation or the society of the other, and it relieves the husband from his common-law liability for the support of the wife or for debts contracted by her for necessities or in his name. But, as the parties are still husband and wife, neither is at liberty to marry even with the consent of the other, and cohabitation of either with another person of the opposite sex is adultery. Judicial separation has no effect on the property relations of the parties. It does not affect a tenancy by entireties or the right of survivorship in a joint estate nor the wife's dower or the husband's estate by the curtesy. Nor does it affect the husband's rights as guardian of the children of the marriage unless the decree of separation makes express provision for their care and custody. See DIVORCE; HUSBAND AND WIFE.

JUDICIARY, ju-dish'ā-ri. See COURT; JUDGE; MAGISTRATE.

JUDITH (Heb. *Yēhūḏīth*, fem. of *Yēhūdāh*,

Judah), A Jewish heroine, who has given her name to one of the deuterocanonical books (q.v.). According to the story in this book, Nebuchadnezzar, the Assyrian King, after the conquest of the Medes sent Holofernes with a large army against Palestine. The general demanded the destruction of the temple at Jerusalem, and the people prepared to resist him. When Bethulia was attacked, the people were so famished that their leaders had to promise surrender within five days. During this time Judith, described as a rich young widow of the tribe of Judah, left Bethulia, came to the camp of Holofernes, and captivated the general by her great beauty. A banquet was given in her honor, and as Holofernes lay drunk she cut off his head. On the death of the leader the Assyrian army was thrown into a panic, and thousands were killed by the Jews. The story is purely legendary, although the author introduces several historical personages into his tale, such as Holofernes, a satrap under Artaxerxes, and Bagoas, a contemporary of Holofernes. According to Torrey (*Journal of the American Oriental Society*, vol. xx, pp. 160-172), the form Bethulia is a disguise for Shechem. The purpose of the book, which was originally written in Hebrew, is similar to that of Tobit (q.v.), viz., to encourage the pious Jews to remain steadfast and, despite all temptations and sufferings, to maintain their confidence in Yahwe. Hilgenfeld, Noldeke, Schürer, Willrich, and Cowley fix the date in the middle of the second century B.C., others, less plausibly, place it in the Roman period and see in the general tenor references to the conditions prior to Pompey's appearance at Jerusalem (63 B.C.). It is to be noted that the Hebrew versions known, of which there are several, do not represent the original text, but are comparatively late productions based upon the Greek text. Consult the commentary of Fritzsche (Leipzig, 1853), Wace, *Apocrypha*, vol. 1 (London, 1880); Kautzsch, *Apokryphen*, vol. 1 (Tübingen, 1900), and especially Cowley, in Charles, *The Apocrypha and Pseudepigrapha of the Old Testament* (Oxford, 1913).

JUDITH, zhū'dét' (1827-1912). A French actress whose real name was Julie Bernat. She was born in Paris and was a kinswoman of the great Rachel. She made her début in 1845 at Les Folies and appeared at the Théâtre Français four years afterward. Her best rôles were Pénélope, Alemène, Rosine, Charlotte Corday, and Mademoiselle Aissé. In literature she first appeared as fellow translator from the English with her husband, Bernard Derosne; she then translated from Dickens and under the name Judith Barnard wrote *Le château du Tremble* (1872). Her autobiography appeared in 1911.

JUDSON, ADONIRAM (1788-1850). A pioneer American missionary. He was born at Malden, Mass., Aug. 9, 1788; graduated at Brown University, 1807, and at Andover Theological Seminary, 1810. Becoming inspired with missionary zeal, he joined five other students in addressing a letter to the General Association of Massachusetts (Oct. 1, 1810), expressing their wish to labor among the heathen and asking advice. The result was the formation of the American Board of Commissioners for Foreign Missions. (See MISSIONS, CHRISTIAN.) Mr Judson was sent to confer with the London Missionary Society and ask their aid. On the voyage he was captured by a French

privateer and thrown into prison at Bayonne, but when released prosecuted his errand. After his return he and Messrs. Newell, Nott, Hall, and Rice were appointed by the American Board as missionaries to India or Burma. He was ordained Feb. 6, 1812, and February 19 they sailed for Calcutta. Arriving (June 17), they were ordered by the East Indian government to return home in the vessel which brought them; and, though this demand was modified, they were required to leave soon. Mr. Judson and his wife, having changed their views in regard to baptism, were immersed by Rev William Ward, of Calcutta. This led to the formation of the American Baptist Missionary Union (1814). Mr. and Mrs. Judson went to the Isle of France, afterward to Madras, with the design of reaching Penang, but, being thwarted in their wishes, took passage for Rangoon. Here (1813), alone and without assured means of future support, they entered upon the study of the languages. The Baptist churches of the United States responded to their appeal and supported the mission. Within a few years they gathered a church of 18 members, and won friends among the people. The government, however, had given some tokens of disapproval. Dr. Price, a physician, having joined the mission, was sent for by the King to come to Ava, the capital, and Mr Judson removed thither to act as his interpreter. War breaking out between the East India Company and Burma (1824), Mr. Judson was arrested, thrown into the death prison, and subjected to cruel barbarities. After a year and seven months he was released, in February, 1826, on the demand of Gen. Sir Archibald Campbell. He commenced a new mission in Amherst, Lower Burma, but, an embassy being sent thence to negotiate a treaty which it was hoped would secure religious toleration, his services as interpreter were again required at Ava. In 1827 he removed to Maulmain, where a church was formed. In 1830 Mr. Judson's health failed, and in 1845, because of illness in his family, he returned to America. In 1847, however, he was back in Rangoon. Here he gave himself partly to the preparation of a dictionary and partly to Christian teaching. In 1850, his health having declined almost beyond the possibility of recovery, he was carried in a litter on board ship at Maulmain in the hope that a voyage would benefit him. He died four days later, and his body was committed to the ocean, April 12, 1850. Numerous converts, a corps of trained native assistants, the translation of the Bible and other valuable books into Burmese, the compilation of a Burmese grammar and a Pali dictionary, and a large Burmese and English dictionary nearly completed, are some of the direct fruits of his 37 years of missionary service. Consult his life by Wayland (New York, 1853) and by his son, Edward Judson (ib., 1883, new ed., 1898). Dr Judson was thrice married.—**ANN HASSETTINE**, his first wife, was born at Bradford, Mass., Dec. 22, 1789. She was married in 1812 and shared with great fortitude her husband's trials and sufferings during the beginning of his service in Burma. While he was imprisoned at Ava, she saved his life by ministering to his wants, and it was largely due to her untiring exertions that he was finally released. Her health was seriously impaired by her hardships at this time. She died at Amherst, Oct. 24, 1826. While on a visit home in 1822, she pub-

lished a history of the Burma mission. Consult her life by Knowles (Boston, 1829).—**SARAH HALL (BOARDMAN)**, Dr. Judson's second wife, was born at Alstead, N. H., Nov. 4, 1803. In 1825 she married Rev. George Dana Boardman and went with him to join the Baptist mission in Burma. Mr. Boardman died in 1830, and four years later she was married to Dr. Judson. She translated part of the *Pilgrim's Progress*, several tracts, and a hymn book into Burmese, and supervised a translation of the New Testament into Peguan. She died on shipboard at St. Helena while returning to America, Sept. 1, 1845. Consult her life by Emily C. Judson (New York, 1849).—**EMILY CHUBBOCK**, the third wife of Dr. Judson, was born at Eaton, N. Y., Aug. 22, 1817. She attained repute as a writer under the pen name of Fanny Forester and was commissioned to write the life of the second Mrs. Judson. She married Dr. Judson June 2, 1846, and the same month accompanied him to Burma. After his death (1850) she returned to America; but her health remained feeble, and, aside from assisting Dr. Wayland in his memoirs of Judson, she could do little literary work. She died at Hamilton, N. Y., June 1, 1854. Consult her life by A. C. Kendrick (New York, 1861). Dr. Judson's son, Edward (qv), erected a church in New York as a memorial to his father and served as its pastor.

JUDSON, EDWARD (1844-1914). An American Baptist clergyman, born at Maulmain, British Burma, a son of the missionary Adoniram Judson. He graduated in 1865 at Brown University, in 1868 was appointed professor of Latin and modern languages in Madison (now Colgate) University, in 1874-75 traveled abroad, and after being ordained to the Baptist ministry in the latter year was pastor of a church at Orange, N. J., until 1881. Thereafter to the time of his death he occupied the pulpit of a New York City church, first known as the Berean Church, later as the Memorial Baptist, and finally as the Judson Memorial. Dr. Judson having erected a large building on Washington Square to house the congregation, equipped with the facilities of an "institutional" church. He lectured on theology at the University of Chicago (1904-06) and on Baptist principles and polity at Union Theological Seminary (1906-08) and was made professor of pastoral polity at Colgate. In 1899 he published a *Life of his father*, and he wrote also *The Institutional Church*.

JUDSON, FREDERICK NEWTON (1845-). An American lawyer, born at St. Mary's, Ga. He graduated from Yale University in 1866 and from the St. Louis Law School in 1871; served as private secretary to Gov. Gratz Brown (1871-73) and as president of the St. Louis board of education (1880-82, 1887-89); was special counsel for the United States in railroad rebate and rate cases (1905, 1910); and was member of a commission to investigate the power of Congress to regulate the security issues of the railroads (1910). In 1912 he served on the arbitration board which settled the dispute between railroads and locomotive engineers in the East. He lectured at Washington University and (1913) was Storrs lecturer at the Yale Law School. In 1907-08 he was president of the American Political Science Association. He published: *Law and Practice of Taxation in Missouri* (1900); *The Taming*

Power, State and Federal, in the United States (1902); *The Law of Interstate Commerce* (1905, 2d ed., 1912); *The Judiciary and the People* (1913).

JUDSON, HARRY PRATT (1849-). An American university president, born at Jamestown, N. Y., and educated at Williams College (A.B., 1870, A.M., 1883). He taught in the Troy (N. Y.) High School in 1870-85 and was professor of history and lecturer on pedagogics at the University of Minnesota in 1885-92. At the University of Chicago he became professor of political science and head dean of the colleges in 1892, head of the political science department and dean of the faculties of arts, literature, and science in 1894, acting president in 1906, and president of the university in 1907. He became a member of the General Education Board in 1906 and of the Rockefeller Foundation in 1913. Besides editing a series of readers, he is author of *History of the Troy Citizens' Corps* (1884), *Cæsar's Army* (1888); *Europe in the Nineteenth Century* (1894; 3d ed., rev., 1901); *The Growth of the American Nation* (1895, 2d ed., 1900), *The Higher Education as a Training for Business* (1896, 2d ed., 1911); *The Government of Illinois* (1900), *The Essentials of a Written Constitution* (1903).

JUDSON POWDER. See EXPLOSIVES

JUDY. The name of Punch's wife in the popular puppet show *Punch and Judy*. She is also called Joan.

JUEL, JØEL, NIELS (1629-97). A Danish admiral, born at Christiania and educated at Sorø. In 1650 he went to Holland and served in the war with England and the Barbary States under Tromp and De Ruyter. He returned to Denmark (1656) and under Obdam and De Ruyter with the allied Dutch fleet fought against Sweden in 1659. But his most splendid fight was in the later war with Sweden, when, after conquering Gothland, he met more than 40 ships of the enemy with his 25, and put them to rout in the battle of Jasmund, between Bornholm and Rügen (May, 1676). Again, in the following year he defeated the Swedish Admiral Sjöblad, who outnumbered him, 36 ships to 25, at the great battle in the Bay of Kjöge. Juel's later years were spent in administrative offices, where he showed great ability, especially in reforming and building up the navy.

JUENGLING, yǔng'ling, FREDERICK (1846-89). An American wood engraver, born in New York City. He studied at the Art Students' League and was the first secretary and one of the founders of the American Society of Wood Engravers (1881). He belonged to the new school, which, for the long lines and regular sweeps of the graver, sanctioned by tradition, desired to substitute short, broken lines and dot-tipping. Sylvester Koehler, in his paper on the "United States" contributed to the important folio volume *Die Radierung der Gegenwart* (Vienna, 1892-93), calls him the "boldest and most inconsiderate experimenter among the pioneers of the new school," but cites his reproduction of "Monticello" as a veritable triumph of wood engraving. Juengling's reproductions of Kelly's illustrations in *Scribner's Monthly* (1877) is regarded by Weitenkampf as making "the first obvious, continued assertion of the new point of view." Consult Frank Weitenkampf, *American Graphio Art* (New York, 1912). See WOOD ENGRAVING.

JU'GA. An acacia whose pods are used in tanning. See **ALGABOVILLA**.

JUG'GERNAUT. See **JAGANNATH**.

JUG'GLER (from OF., *F. jongleur*, from Lat. *joculator*, jester, joker). A performer who exhibits feats of skill and dexterity. The term has broader ramifications; its French form *jongleur* is applied to a class of persons who included musical and literary features in their entertainments, while, on the other hand, men who merely produce illusions by sleight of hand (see **LEGERDEMAIN**) are often known as jugglers. The ancient Romans had their conjurers or wonder workers (*præstigiatores*), their throwers of knives (*ventilatores*), and their players with balls or rings (*pilarii*). In modern times the Chinese and Japanese are skilled jugglers; their feats are more the results of agility and practice than the marvelous performances of the Hindu fakirs, which come more properly under the head of legerdemain. See **FIRE EATING**.

JUGGS. See **JOUGS**.

JUG'LANDACEÆ (Neo-Lat. nom. pl., from Lat. *juglans*, walnut, from *Jovis*, Jove, Gk. *Zeús*, Zeus, Zeus, Skt *dyaus*, sky + *glans*, acorn, connected with Gk. *βάλανος*, *balanos*, acorn), THE WALNUT FAMILY. A family of dicotyledonous plants with about six genera and 40 species, natives of the north temperate zone, the members of which are mostly trees with alternate compound leaves, unattractive, wind-fertilized, monœcious flowers, the staminate in catkins, the pistillate sessile on twigs of the current year's growth. The arrangement of buds is rather unusual, there are often several in a row, and they appear high above the leaf axils. The fruit is a nut. The Juglandaceæ are associated with the willow and poplar (*Salicaceæ*), birch and alder (*Betulaceæ*), and beech and oak (*Fagaceæ*), in the assemblage called *Amentifera*, or ament-bearing plants, regarded by many as the most primitive assemblage of Angiosperms. The Juglandaceæ are distinguished from these by their compound leaves. The timber of the principal genera is valuable, that of the black walnut being in demand for cabinetwork, etc., and the hickory for use where toughness and strength are desirable, as in tools and implements. The chief genera are *Juglans* (the walnuts) and *Hicoria* (the hickories). See **WALNUT**, **HICKORY**, Plate of **BRAZIL NUT**.

JUGULAR (joo'gû-lar) **VEIN** (from Lat. *jugulum*, *jugulus*, collar bone, dim. of *jugum*, yoke) One of two veins situated on each side of the neck, in pairs, whose function is to convey the blood from the head to the heart. The external jugular vein on either side is located just underneath the skin and conveys the blood from the external portions of the head and neck; while the internal jugular vein on either side is deeper, lies near the carotid artery, and conveys the blood from the lateral sinus of the cranium.

JUGUR'THA (Lat., from Gk. *Ἰουγούρθας*, *Iougourthas*) (?-104 B.C.) King of Numidia (q.v.). He was the grandson of Masinissa (q.v.), King of Numidia, and was brought up together with his cousins Adherbal and Hiempsal, the sons of his uncle Micipsa, who succeeded Masinissa on the throne. He was finely gifted by nature and well trained in horsemanship and in warlike exercises. In 134 B.C. he was sent by Micipsa to Spain to lead a Numidian force in alliance with the Romans under

Scipio Africanus Minor. At this time he gained the friendship of Scipio and other influential Romans. On the death of Micipsa (118 B.C.) Jugurtha was given a share in the Kingdom with his cousins, but he soon caused Hiempsal to be murdered and drove Adherbal out of Numidia. Adherbal appealed for aid to Rome; but Jugurtha succeeded in bribing many Roman senators and obtained a decision in his favor, freeing him from the charge of the murder of Hiempsal, and assigning to him the western part of Numidia, a district populous and rich, whereas to Adherbal was given the eastern portion, which consisted largely of deserts. But Jugurtha soon invaded Adherbal's dominions and, notwithstanding injunctions by the Romans to the contrary, besieged him in the town of Cirta (112 B.C.) and caused him and the Romans who were captured with him to be put to death with horrible tortures. War was declared against Jugurtha by the Roman people, but, while the Roman generals, Jugurtha contrived for years to baffle the Roman power. At last the Consul, Q. Cæcilus Metellus, proving inaccessible to bribes, defeated him in 109 and 108 B.C., and he was compelled to flee to the Mauritanian King, Bocchus. Marius (q.v.), who succeeded Metellus in the command, carried on the war against Jugurtha and Bocchus, till at last Bocchus, persuaded by Sulla (q.v.), delivered up Jugurtha to the Romans (106 B.C.). The King, after being kept a captive in Africa for two years, was exhibited at Rome in the triumph of Marius (104 B.C.), and was then thrown into the underground dungeon, the Tullianum, to die of hunger (or to perish by starvation). In the war against Jugurtha, Marius, the future rival *imperatores*, first gained celebrity. Jugurtha's fame rests chiefly on the masterly essay, *Bellum Iugurthinum*, of the Roman historian Sallust (q.v.). Consult Meinel, *Zur Chronologie des Jugurthinischen Krieges* (Augsburg, 1883), Berve, *Res Numidarum et Maurorum* (Halle, 1885), Greenidge, *A History of Rome*, vol. i (London, 1904), Pelham, *Essays* (Oxford, 1911).

JÜHLKE, yul'ke, FERDINAND (1815-93). A German horticulturist, born at Barth in Pomerania. He was trained in the Botanical Gardens at Greifswald and in 1854 was appointed royal horticultural inspector and head of an experimental station. In 1858 he purchased a large horticultural establishment in Erfurt. From 1866 to 1891 he was director of the Prussian Royal Gardens, succeeding Lenné. He retired in the latter year. He edited the *Eldenaer Archiv* (1854-59) and wrote many works on gardening, including *Gärtnerische Reiseberichte* (1853), *Gartenbuch für Damen* (3d ed., 1874); *Ueber die Stellung der Botanik zur Landwirtschaft und zum Gartenbau* (1865), *Die königliche Gärtnerlehranstalt und Landesbaumschule* (1872). He edited Schmidlin, *Blumenzucht im Zimmer* (4th ed., 1880).

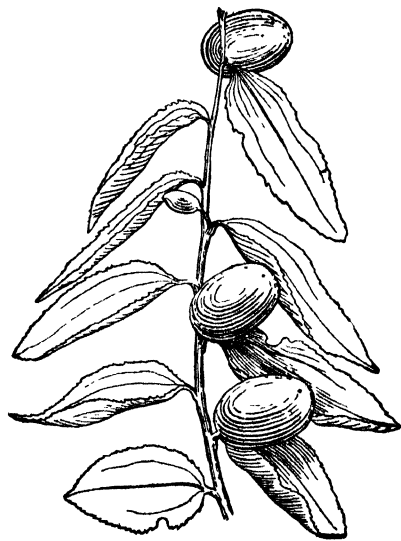
JÜHLKE, KARL LUDWIG (1856-86). A German explorer, son of Ferdinand Jühlke, born at Eldena. He studied law at Tübingen, Leipzig, Heidelberg, and Berlin, and in 1884, as one of the founders of the German Colonization Association, went with Peters to East Africa and explored and annexed the country around Mount Kilimanjaro. He was murdered by a Somali on a second expedition, in 1886. He

published *Die Erwerbung des Kilima-Ndscharo-Gebietes* (1886).

JUIF ERRANT, zhǔwéi é'rǎn', LE (Fr., The Wandering Jew). 1. A famous romance by Eugène Sue (1845). The main plot rests on the contest for a fortune of 150,000,000 francs, which is to fall either to the Jesuits or to those members of the Rennepont family who shall be in Paris on a given date. The Renneponts are the descendants of the Wandering Jew, who, with his sister, is doomed to endure life until the last of his race has disappeared. In the romance the Jesuits employ all means to annihilate the family before the appointed day. The story was dramatized by Sue, and successfully produced at the Ambigu in 1849. 2. An opera by Halévy (1852). See WANDERING JEW.

JUIVE, zhǔwēi, LA (Fr., The Jewess). An opera by Halévy (q.v.), first produced in Paris, Feb 23, 1835, in the United States, April 30, 1860 (New York).

JUJUBE, jū'júb (Fr. *jujube*, from Lat. *zizyphum*, Gk. *ζίζυφορ*, *zizyphos*, jujube, from Syriac *zūzfā*, jujube, Pers. *zizfin*), *Zizyphus*. A genus of spiny and deciduous shrubs and small trees of the family Rhamnaceæ. The common jujube (*Zizyphus sativa*) of the south of Europe, Syria, India, and China is a low tree, which produces a red or yellow fruit resembling an olive in shape and size, and which dried as a sweetmeat forms an article of commerce. *Zizyphus vulgaris* is the common Indian jujube, which forms an important article of commerce. *Zizyphus jujuba* is another common species grown in vari-



JUJUBE.

ous warm countries. The lotus (*Zizyphus lotus*), a Persian or North African shrub 2 or 3 feet high, produces in great abundance a fruit about as large as a sloe and with a large stone, but having a sweet farinaceous pulp, which the natives of some parts of Africa make into cakes resembling gingerbread. A kind of wine is sometimes made from it. Some botanists combine *Zizyphus sativa* and *Zizyphus lotus* into one species. *Zizyphus spina-christi*, another native of the Mediterranean region, is sometimes said to be the plant from the branches of which Jesus' crown of thorns was

made and is therefore called Christ's-thorn and Jews'-thorn, names which for the same reason are also given to *Paliurus aculeatus*. The fruit is about the size of a sloe, oblong, and pleasantly acidulous. Pleasant refreshing drinks are made from the fruits of these trees, and formerly syrup of jujubes was used as a pectoral. Jujube paste of the confectioners at one time contained jujube fruit, but it is now commonly made of gum arabic and sugar without any fruit.

JUJUTSU, jōō'jut'su, or **JIUJITSU**, jōō'-jit'su. A form of wrestling practiced in Japan. See WRESTLING.

JUJUY, juōō-hwé'. A province of Argentina, occupying the northwest end of the Republic, and bounded by Bolivia on the north, by the Province of Salta on the south and east, and by the provinces of Salta and Los Andes and the Republic of Bolivia on the west (Map: Argentina, F 2). Its area is 18,981 square miles. An elevated plain known as the Puna de Jujuy covers all the northwest portion, which is a continuation of the great Bolivian table-land, terminating in a mountain chain, with snow-covered peaks rising to an altitude of over 15,000 feet. This portion of the province has a cold climate, poor vegetation, and is almost uninhabited. On the east side of the range the surface slopes gradually towards the Chaco (q.v.) plains, interspersed by a few inconsiderable mountains. This part has a hot and moist climate, is well watered, and is very productive. The entire province is traversed by the Río Grande de Jujuy, a tributary through Río Bermejo of the Paraguay. The Puna has two large lakes, Toro and Casabindo, the latter of which furnishes an immense quantity of salt. The mountains contain rich mineral deposits, including asphalt, gold, silver, gypsum, quicksilver, and petroleum. Very little, however, has been done towards exploiting the mineral deposits of the province, in spite of the fact that it is connected by rail with the central portion of the Republic. The chief products are sugar, wheat, rice, brandy, and hides. Pop., 1895, 49,713, 1912 (est.), 64,197. Capital, Jujuy (q.v.).

JUJUY. The capital of the Province of Jujuy in northwest Argentina, situated on the Río Grande de Jujuy (Map: Argentina, F 2). The town has a national college, a normal school for women, and other public schools. It is connected by rail with Buenos Aires and owes its importance chiefly to its transit trade with Bolivia, which is carried on by the road leading north through the pass of Las Cortaderas. It was founded in 1592. Pop., 1895, 4159, 1912 (est.), 6000.

JUKES, JOSEPH BEETE (1811-69). An English geologist, born near Birmingham. He graduated at St. John's College, Cambridge, in 1836, and then entered upon a course of practical investigation in geological science. He was geological surveyor of Newfoundland in 1839-40 and was appointed in 1842 naturalist of the surveying expedition of H. M. S. *Fly*, engaged in the exploration of Torres Strait, New Guinea, and the east coast of Australia. In 1846 he was employed in the Geological Survey of Great Britain and contributed to the official report special memoirs on certain districts. He was director of the Geological Survey of Ireland in 1850 and afterward professor of geology in the Royal Dublin Society and the Royal College of

Science at Dublin. Professor Jukes wrote the article "Geology" for the *Encyclopædia Britannica* (8th ed.) and several important works, including: *Excursions in and about Newfoundland* (2 vols., 1842); *A Sketch of the Physical Structure of Australia* (1850), *Popular Physical Geology* (1853); and the well-known *Students' Manual of Geology* (1857; 2d ed., 1862; rev. by A. Geikie, 1872; 5th ed., 1890).

JUKES, THE. A pseudonym used to protect certain worthy members of a family in New York State whose history displays unique conditions of crime, disease, and pauperism. In July, 1874, R. L. Dugdale investigated some county jails in the State and, as a result, made a further genealogical study of this particular family. The two sons of the so-called Max, a backwoodsman, descendant of an early Dutch settler, married two Jukes sisters, one of whom is known as "Margaret, mother of criminals." Out of 1200 descendants 709 were traced, of whom 280 had received public support, 140 were criminals and offenders, serving in all 140 years in prison, and a large proportion were licentious and nervously diseased. The estimated social cost of the family in 75 years was \$1,308,000. This valuable study in heredity was first published as the thirtieth annual report of the Prison Association of New York, under whose auspices the inquiry was made, and more recently in a separate volume (5th ed., New York, 1891). Consult R. L. Dugdale, *The Jukes* (4th ed., ib., 1910).

JUKES-BROWNE, ALFRED JOHN (1851-1914). An English geologist, born at Penn Fields near Wolverhampton. He graduated at St. John's College, Cambridge. From 1874 to 1902, when he retired on account of ill health, he was a member of the Geological Survey, and in this connection he made an extensive and thorough investigation of the Upper Cretaceous rocks of Great Britain. In 1888-89 he investigated the geology of the island of Barbados. The Murchison medal of the Geological Society was awarded him in 1901. His publications include students' handbooks of *Physical Geology* (1881), *Historical Geology* (1886), and *Stratigraphical Geology* (1902, 2d ed., 1912), *The Building of the British Isles* (1888; 3d ed., 1911); *The Cretaceous Rocks of Britain* (3 vols.).

JUKOVSKY, zhōō-kōf'skē, VASSILI ANDREYEVITCH, properly ZHUKOVSKY (q.v.). A Russian poet and translator.

JÜLG, yulk, BERNHARD (1825-86). A German philologist, born at Ringelbach and educated at Heidelberg and Berlin (1844-48). After he had taught in the schools of Heidelberg, Freiburg, and Rastatt, he was appointed professor of classical philology at Lemberg (1851), at Cracow (1853), and Innsbruck (1863). His special study was comparative philology and Oriental folklore. Among his works are the new edition of Vater, *Litteratur der Grammatiken, Lexika und Wortsammlungen aller Sprachen der Erde* (1847), *Die Märchen des Siddhi-kür* (1866); *Mongolische Märchen* (1867); *Ueber Wesen und Aufgabe der Sprachwissenschaft* (1868), *Die griechischen Heldensagen im Widerschein bei den Mongolen* (1869); *On the Present State of Mongolian Researches* (1882).

JULIA. 1. Daughter of Augustus and Scribonia and the Emperor's only child. She was born in 39 B.C. Augustus (then known as Octavianus) divorced her mother a few days

after her birth, that he might marry Livia Drusilla (q.v.), and the child was brought up under her father's care in the strictness and simplicity of his earlier court. At 14 (25 B.C.) she was married to her cousin Marcus Claudius Marcellus, son of Octavia, the Emperor's sister (the Marcellus of Vergil, *Æneid*, vi, 860-885); after his death she became the wife of Marcus Vipsanius Agrippa (q.v.), the Emperor's counselor and friend (22 B.C.). Their children were Gaius Cæsar and Lucius Cæsar, who died in their boyhood; Julia; Agrippina (q.v.), who married Germanicus and became the mother of the Emperor Caligula; and Agrippa, surnamed Postumus, because he was born after his father's death in 12 B.C. Shortly after this event Augustus meditated a new marriage for Julia, and the ambition of the Empress Livia induced him to give her in marriage to Livia's son, Tiberius Claudius Nero, in order to secure his accession to the throne (11 B.C.). The marriage proved unhappy, and the character of Julia is depicted in very unfavorable colors by the Roman historians. Tiberius was adopted as heir to the throne, but Julia was exiled in disgrace by Augustus and was treated almost as a state prisoner. She passed her remaining years in sad confinement, first on the island of Pandataria, then at Rhegium, where she died of consumption superinduced by neglect, at the age of 52 (14 A.D.), shortly after the death of Augustus and the accession of Tiberius. Augustus had ordered that she should not be buried in his mausoleum at Rome. Consult: Schiller, *Geschichte des römischen Kaiserreichs*, vol. 1 (Gotha, 1883), Gardthausen, *Augustus und seine Zeit*, vol. 1 (Leipzig, 1891), Schuckburgh's note on Suetonius, *Augustus*, 64 (Cambridge, 1896), Kahrstedt, in *Klio* (Leipzig, 1910). 2. Daughter of the foregoing and of Agrippa. She was married to Æmilius Paulus Lepidus, in 1 A.D. In 9 A.D. she too was banished for immorality. She lived henceforth on the island of Tremerus off the coast of Apulia, supported by an allowance from Livia Drusilla (q.v.). She died in 29.

JULIA. 1. A character in Shakespeare's *Two Gentlemen of Verona*, the ladylove of Proteus. 2. The ward of the title character in Sheridan Knowles's *The Hunchback*. She becomes the wife of Sir Thomas Clifford. 3. Sir Anthony Absolute's ward, in love with Falkland, in Sheridan's *Rivals*. 4. In Byron's *Don Juan*, a married woman of Seville who loves the youthful Don Juan.

JULIA DOM'NA (c.167-217). A Roman empress, wife of Septimius Severus and mother of Caracalla and of Geta. She was born at Emesa in Syria and married the Emperor in 187, at Lyons. The contemporary authorities agree in making her fond of literature, but differ widely in regard to her personal character. Dion, whom Gibbon follows, makes her an ideal mother and a power for good during Caracalla's reign, but the more common story makes her unspeakably wicked and describes her unnatural relations with Caracalla. She killed herself soon after the death of her son. Consult the article "Tulius, 97," in Lübker, *Reallexikon des klassischen Altertums* (8th ed., Leipzig, 1914).

JULIAN, CARDINAL (GIULIANO CESARINI) (1398-1444). A cardinal of the fifteenth century. He was born at Rome of noble family, educated at the University of Perugia, and became professor of jurisprudence at Padua. Pope

Martin V made him apostolic prothonotary and advanced him through successive grades to Cardinal Bishop of Frascati. He also appointed him to preach and lead a crusade against the Hussites, which turned out disastrously for the Cardinal (1431). He became president of the Council of Basel (q.v.) and there exerted himself to win back the Hussites by peaceful measures. When the quarrel between Pope Eugenius IV (q.v.) and the council broke out, Julian defended the independence of the council and its superiority over the pontiff, at the same time defending the cause of the Pope against the attacks of many leaders of the Church. Finding the council unwilling to meet his views, he changed his course and became a firm adherent of Eugenius. When the Pope transferred the council to Ferrara (see FERRARA-FLORENCE, COUNCIL OF), Julian resigned the presidency and hastened to the latter place. He was prominent there and at Florence in the negotiations with the delegates of the Eastern church. Later Eugenius sent him to Hungary to stir up a crusade against the Turks. He was killed in the flight after the battle of Varna, Nov. 10, 1444. Consult: Jenkins, *The Last Crusader* (London, 1861); Ludwig Pastor, *History of the Popes*, vols. i, ii (ib., 1899); Mandell Creighton, *History of the Papacy*, vols. ii, iii (ib., 1905).

JULIAN, COUNT. A governor of the Spanish Goths, whose daughter Florinda was said to have been betrayed by King Roderic. In revenge Julian allied himself with the Saracens and changed his faith in order to overthrow Roderic.

JULIAN (FLAVIUS CLAUDIUS JULIANUS), surnamed THE APOSTATE, on account of his renunciation of Christianity. Roman Emperor (361-363 A.D.). He was born at Constantinople in 331 or 332 and was the son of Julius Constantius, the brother of Constantine the Great. He and his brother Gallus, because they were too young to be dangerous, were spared when Constantius II, son of Constantine, massacred the rest of the Imperial family. They were, however, removed to a lonely castle in Cappadocia, where they were subjected to a system of rigorous espionage. Julian's life was very miserable, and the monkish education which he received produced no other result than a strong detestation of the religion professed by his tormentors. He was fond of literature and philosophy, and he instinctively turned away from the rude asceticism, gloomy piety, and barbarous janglings of Homoeusians and Homoiousians, to the cheerfulness, refinement, and pure intellectual meditateness of the old Greek philosophers. Some of his teachers appear to have been (secretly) pagans, for the sudden change in the state religion brought about by Constantine the Great had necessitated a great deal of hypocrisy, especially among scholars and government officials. At the age of 20 Julian was at heart a disbeliever in the divine origin of Christianity. After his brother Gallus had incurred the enmity of Constantius and had been put to death (end of 354), Julian was removed by Constantius to Milan, but was subsequently allowed to go to Athens, the home of Greek learning, where he gave himself up to philosophical pursuits. The Emperor, though still jealous and suspicious, presently summoned him again to Milan, gave him his sister Helena in marriage, conferred on him the title of Caesar (Nov. 6, 355), and sent him to Gaul to protect it from the incursions of the Germans. Julian defeated

the Alemanni (q.v.) at Strassburg (August, 357) and compelled the Franks (q.v.) to make peace. His internal administration in Gaul was mild and judicious; he rebuilt cities and reduced taxes. Paris was his headquarters. His popularity in consequence became very great, and, when Constantius ordered him to set out for the East, Julian's soldiers rose in insurrection and proclaimed him Emperor. Julian set out for Constantinople, to oppose Constantius; the latter began his return from Syria, to suppress Julian. The death of Constantius at Mopsucene in Cilicia, Nov. 3, 361, removed the only obstacle from Julian's way, and on December 11 he made a triumphal entrance into Constantinople. He now publicly avowed himself a pagan, but surprised both Christians and pagans by his edict of toleration. Yet he chose most of his officers from the professed followers of the old religion and compelled the Christians to contribute to the restoration of the heathen temples. In 362 he made great preparations at Antioch, in the hope of bringing the war with the Persians to a successful termination, and in the following year advanced to Ctesiphon and across the Tigris, defeating a Persian army which disputed his passage of the river; but want of provisions and treachery necessitated his retreat. He was followed and attacked by the enemy, who were repeatedly repulsed; but in one of the engagements he was mortally wounded by an arrow, and died June 28, 363. Julian was a monarch of great ability. His rule was just, liberal, and humane. He composed, in Greek, a great number of orations, letters (about 80), satires, and also poems (collected and published by Spanheim in 1696 and by Hertlein, Leipzig, 1875-76). Among his lost works are his *Refutation of the Christian Religion*, destroyed by the efforts of Theodosius II, and memoirs of his German campaign and his diary. We possess a series of letters, addressed to literary men, nine orations; a satirical work called *Cæsares*, and the curious *Misopogon* (Beard-Hater), a satire on the immorality of Antioch and a playful account of his own life and manners (the Antiocheans, who were clean-shaven, poked fun at Julian's beard). The best edition of the complete works of Julian is that of Hertlein (2 vols., Leipzig, Teubner, 1875-76); there is an English translation in the Bohn Library, a translation under way (1913 ff.) in the Loeb Classical Library, by Wright, with introduction and bibliography, and a complete French translation by Talbot (Paris, 1863). Consult: Rendall, *The Emperor Julian, Paganism, and Christianity* (London, 1879); Gardner, *Julian, Philosopher and Emperor*, in "Heroes of the Nations Series" (New York, 1895); Dill, *Roman Society* (London, 1899); Muller, *Kaiser Flavius Claudianus Julianus* (Hanover, 1901); and Negri, *Julian the Apostate* (2 vols., New York, 1905); Sandys, *A History of Classical Scholarship*, vol. i (2d ed., Cambridge, 1906); Mau, *Die Religionsphilosophie Kaiser Julians* (1907).

JULIAN, GEORGE WASHINGTON (1817-99). An American political leader, born near Centreville, Ind. He received an academic education, taught school for several years, and in 1840 was admitted to the bar. His political career began with his election as a Whig in 1845 to the State Legislature. In 1848 he became one of the leaders in the Free-Soil movement, was a delegate to the Buffalo Convention in that year,

in the following year was elected to Congress by a coalition of Whigs and Free-Soil Democrats and served until 1851. In 1852 he was the candidate for Vice President on the Free-Soil ticket with John P. Hale. In 1860 he was elected to Congress as a Republican, and he served by reelection until 1871. He was a member of the famous joint committee on the conduct of the war and later was a member of the committees on reconstruction and on public lands, serving as chairman of the latter for eight years. He joined the Liberal Republican movement in 1872 and supported Greeley for the presidency. Thenceforth he acted with the Democrats. In 1885-89 he was surveyor-general of public lands in New Mexico. He published: *Speeches on Political Questions*, which contains a biographical sketch of him by Lydia Maria Child (Boston, 1872); *Political Recollections* (1884); and a *Life of Joshua R. Giddings* (1892).

JULIAN ALPS (Lat. *Alpes Juliae*). The southernmost extension of the Eastern Alps. They extend from the Carnic and Venetian Alps, on the northeast borders of Italy, southeastward through the Austrian coastland towards the Karst (q.v.) Plateau, near Trieste (Map: Austria-Hungary, D 4). They consist chiefly of calcareous slate and dolomite and are extremely rough and wild in configuration, with romantic valleys and waterfalls, and beautiful mountain lakes surrounded by forest-covered heights. Their highest peak is the Triglav, with an altitude of 9394 feet.

JULIAN CALENDAR. See CALENDAR

JULIANUS, SALVIUS (c.92-c.155). A Roman jurist, of the liberal school of Ateius Capito, whose full name was Lucius Octavius Cornelius Salvius Julianus Aemilianus. He held important offices under Hadrian and Antoninus Pius. As praetor, in 131 he codified Roman equity as it then existed. His work was made binding for the future, so that no later praetor could modify the law. Besides this *edictum perpetuum* (see EDICT), his writings are many; in Justinian's Pandects (q.v.) there are many quotations from his *Digesta*. He laid down the legal principle that any ex-praetor had the *jus respondendi*, and that it was not confined to those senators authorized by the Emperor to exercise the right. Consult: Buhl, *Salvius Julianus* (Heidelberg, 1886); Schanz, *Geschichte der römischen Literatur*, part iii (2d ed., Munich, 1905); and the article "Octavius, 14," in Lübker, *Reallexikon des klassischen Altertums*, vol. ii (8th ed., Leipzig, 1914).

JULIBONA, or JULIOBONA. See LILLEBONNE.

JÜLICH, yu'lik (Fr *Juliers*). A town of the Rhine Province, Prussia, situated on the Roer, 18 miles northeast of Aix-la-Chapelle (Map: Prussia, B 3). It has several churches, an officers' school, a sixteenth-century château, a museum, and manufactures of sugar, paper, silk, and leather. Pop., 1905, 6009; 1910, 6633. Jülich was strongly fortified till 1860. It was long the capital of an independent duchy. On the death of the Duke of Jülich without heirs, in 1609, began the Jülich-Cleves War of Succession. In 1610 it was captured by Holland and in 1622 by Spain. The line of counts palatine of Neuburg becoming extinct in 1742, Jülich passed to the counts palatine of Sulzbach, afterward electors of Bavaria. In 1794 it was annexed to

France, but in 1814 was assigned to Prussia by the Congress of Vienna.

JÜLICHER, yu'lik-ër, GUSTAV ADOLF (1857-). A German biblical scholar. Born at Falkenberg, near Berlin, he studied at the University of Berlin and in 1882-88 was preacher at the Rummelsburg orphan asylum. He was docent of Church history in the University of Berlin in 1887 and in 1888 became professor of Church history and New Testament exegesis at Marburg. Besides important contributions to the *Jahrbücher für protestantische Theologie* on the criticism of the Hexateuch, he published *Die Gleichnisreden Jesu* (1888-89) and *Einleitung in das Neue Testament* (1894, 6th ed., 1906), of which an English translation by Janet Ward was published in 1904, and which is one of the few "introductions" to the New Testament of real value, particularly as checking and correcting the similar work of Theodor Zahn.

JULIE, zhu'lé', ou, LA NOUVELLE HÉLOÏSE, là nōō'vél' a'lō'éz' (Fr., Julia, or, the New Heloise) A famous sentimental novel by J. J. Rousseau, written at the Hermitage between 1757 and 1759 and published at Amsterdam in 1761. The story is told in the form of letters between Julie d'Étanges and her tutor and lover, Saint-Preux.

JULIEN, zhu'lyän' An opera by Charpentier (q.v.), first produced in Paris, June 4, 1913, in the United States, Feb. 26, 1914 (New York).

JULIEN, ALEXIS ANASTAY (1840 -). An American geologist, born in New York City. He graduated at Union College in 1859, studied chemistry there for a year, and in 1860-64, while resident chemist on the guano island of Sombrero, carried on a variety of scientific researches. He served on the Michigan Geological Survey in 1872 and on the North Carolina Survey (1875-78), but from 1865 to 1909 was regularly connected with the School of Mines, Columbia University, as assistant in chemistry, instructor in biology, and (1897-1909) curator of geology. His writings include a report on "Lithology" in the Michigan Geological Survey's *Geology of Michigan*, vol. ii (1872), a "Microscopic Examination of Eleven Rocks from Ashland County, Wis.," in the Wisconsin Geological Survey's *Geology of Wisconsin*, vol. iii (1880), "On the Geological Action of the Humus Acids," in the *Proceedings of the American Association for the Advancement of Science* (1880); and "Building Stones: Elements of Strength in their Constitution and Structure," *Journal of the Franklin Institute* (1899).

JULIEN, zhu'lyän', STANISLAS AIGNAN (1799-1873). A French savant who, though he never set foot in China, became the foremost Sinologist of his day. He was born at Orléans. He early showed marked ability for the acquisition of languages. In 1821 he became assistant professor of Greek in the Collège de France, but was soon attracted to Chinese by the lectures of Abel Rémusat, then professor of Chinese in the same college. In 1823 he brought out a Latin translation of the works of the philosopher Mengtse (Mencius). He was elected a member of the Académie des Inscriptions in 1831, and on the death of Rémusat in the following year he succeeded him in the chair of Chinese. Besides mastering Chinese, Julien applied himself to the study of Sanskrit and Manchu. His works number over two dozen, consist chiefly of

translations from the Chinese, but are accompanied with notes and elucidations of the greatest value. Besides several plays and novels—a department of Chinese literature which first engaged his attention—he produced *Khan-Ing-Pien, Le livre des récompenses et des peines*, accompanied with 400 legends, anecdotes, and stories illustrative of the doctrines and practices of the Taoists (1835); *Résumé des principes traités chinois sur la culture des mœurs, etc* (1837), *Lao-tseu-Tao-Te-King*, the 'Book of the Way and of Virtue' of the Chinese philosopher Lao-tse, who lived in the sixth century B C (1841); *Histoire de la vie de Hiouen-Tsang*, the Buddhist pilgrim, and of his journeys in India between the years 629 and 645 A D (1853); *Histoire et fabrication de la porcelaine chinoise*, translated from the Chinese by the order of the Minister of Agriculture and Commerce (1856); *Mémoires sur les contrées occidentales*, by Hiouen-Tsang (1857-59); *Méthode pour déchiffrer les noms sanscrits qui se rencontrent dans les livres chinois* (1861), a work of great value to students of the immense Buddhist literature of China, *Industries anciennes et modernes de l'empire chinois* (1869). In 1841 he had published a volume containing critical discussions of certain rules of position which in Chinese play the same rôle as inflections in other languages. This he later elaborated into his *Syntaxe nouvelle de la langue chinoise fondée sur la position des mots*, which appeared in 1869—an epoch-making work for students of Chinese. This was followed in 1870 by a supplementary volume containing some controverted and miscellaneous matter. He died in Paris.

JULIERS, zhū'yār'. The French name for Jülich (q.v.).

JULIET. 1. In Shakespeare's *Romeo and Juliet* (q.v.), a young girl of the house of Capulet, beloved by Romeo, of the rival house of Montague. 2. The ladylove of Claudio, in Shakespeare's *Measure for Measure*.

JULIUS, jū'l'yūs. The name of three popes.—**JULIUS I.** SAINT (Pope, 337-352). His pontificate fell in the most difficult times of the Arian controversy, when the sons of Constantine were persecuting the bishops who remained firm in their adherence to the doctrine defined at Nicæa. Julius gave them unflinching support. He examined the charges against the Eusebian party against St. Athanasius and dismissed them, writing a masterly letter to the accusers. In conjunction with the Emperor Constans he summoned the Council of Sardica (q.v.). His day is observed on April 12. His letters are in Migne, *Patrologia Latina*, viii.—**JULIUS II** (Pope, 1503-13), Giuliano della Rovere, a nephew of Sixtus IV, who made him Cardinal in 1471. In 1480 he was sent as legate to France, and on his return two years later filled an increasingly important place at Rome, under his uncle and Innocent VIII. Under Alexander VI, however, he was in opposition; and one of his first steps on his elevation to the papal throne was to resume possession of the Romagna, which had been bestowed on Cesare Borgia. Julius himself was beyond suspicion of nepotism or selfish designs for aggrandizement; but his pontificate was chiefly devoted to political and military enterprises for the complete reestablishment of the papal sovereignty in its ancient territory and for the extinction of foreign domination in Italy. In

pursuance of his designs he entered into the League of Cambrai (1508) with the Emperor Maximilian, Louis XII of France, and Ferdinand of Aragon; later, when the immediate purpose of the league had been attained, fearing the ambitious designs of Louis, he withdrew and entered an opposite alliance, the Holy League. Louis attempted to force the Pope to call a general council for the reform of the Church, and actually had a synod convoked at Pisa in 1511, with the coöperation of some disaffected cardinals. Julius replied by calling the fifth Lateran Council. (See LATERAN COUNCIL.) The Holy League finally triumphed over France in Upper Italy, and Bologna, Reggio, Parma, and Piacenza were assured to the papal government; but death interrupted the further plans of Julius to break the Spanish power in Italy as well. On the whole, if less concerned with spiritual affairs than his office demanded, he had the qualities of a great statesman and general and was also a liberal and judicious patron of the fine arts. He laid the corner stone of St. Peter's Church and was the patron of Raphael and Michelangelo. Consult his life by Dumesnil (Paris, 1873), Brosch, *Papst Julius II und die Gründung des Kirchenstaates* (Gotha, 1878); *Crichton History of the Papacy*, vol. iv (London, 1887), Klaczko, *Rome and the Renaissance* (New York, 1903); Pastor, *History of the Popes*, vol. vi (St. Louis, 1898).—**JULIUS III** (Pope, 1550-55), Giovanni Maria del Monte. He was born in 1487 at Rome, made Archbishop of Siponto in 1512 and of Pavia in 1520 and Cardinal in 1536. He was one of the three legates appointed to open and preside over the Council of Trent (q.v.), which he reopened as Pope in 1551 after its sittings had been suspended for two years. He began his pontificate zealously and with high hopes, as when he sent Cardinal Pole to England to reconcile the Kingdom, but when the Reformation came upon him he lost his energy, and died in 1555.

JULIUS, yōō'h-yūs, DUKE OF BRUNSWICK (1528-89). A German prince, son of Duke Henry the Younger, whom he succeeded in 1568 and whose Catholic policy he reversed. In 1560 he had married Hedwig, daughter of Joachim II of Brandenburg. He secured Brunswick to the Reformation, in 1576 founded the University of Helmstedt, and in 1582-84 inherited land from the counts of Hoya and Kalenberg.

JULIUS CÆSAR. An historical play by Shakespeare, written in 1600 or 1601 and published in 1623. It was based on Plutarch's lives of Cæsar, Antony, and Brutus, and, though not the greatest of Shakespeare's classical dramas, it is a tragedy of great stateliness and force.

JULIUS ECHTER VON MESPELBRONN, yōō'h-yūs ēk'tēr fōn mēs'pel-brōn' (1545-1619). A German Catholic prelate, Bishop of Würzburg, and a leader of the Counter-Reformation. He was born at the castle of Mespelbronn and studied in Germany, at Paris, and in Rome at the Jesuit Collegium Germanicum. In 1579 he founded the Juliushospital and in 1582 the University of Würzburg. In 1573 he became Prince-Bishop of Würzburg. In this post his policy was strenuous: all the Protestant clergy were replaced by Catholics, and the records say that in a single year (1586) there were more than 60,000 converts, and that in three years Protestantism was eradicated from his see. Julius was a prominent member of the Catholic

League (1609). Consult the biography by Buchinger (Wurzburg, 1843).

JULIUS VON DER TRAUEN, dër troun. The pseudonym of the Austrian novelist Julius Alexander Schindler (q.v.).

JULLEVILLE, LOUIS PETIT DE. See PETIT DE JULLEVILLE, LOUIS.

JULIEN, zhü'lyân', ADOLPHE (1845-). A French musical critic, born in Paris. He was educated at the Lycée Charlemagne, studied law, and at the same time acquired a thorough knowledge of music and musical literature. In 1869 he began to contribute to various French musical journals and in 1872 became feuilletonist of the *Français* and subsequently of the *Moniteur Universel*. Among his many important works are: *La musique et les philosophes au XVIIIème siècle* (1873); *Histoire du théâtre de Mme. de Pompadour* (1874); *La comédie à la cour de Louis XVI* (1875); *Goethe et la musique* (1880); *L'Opéra secret au XVIIIème siècle* (1880); *Richard Wagner, sa vie et ses œuvres* (1886); *Hector Berlioz* (1888); *Musiciens d'aujourd'hui* (1892; 2d series, 1894); *Musique* (1896); *Le romantisme et l'éditeur Rendnel* (1897); *Amours d'opéra au XVIIIème siècle* (1909); *Fantini-Latour* (1909); *Ernest Reyer* (1909); *Musiciens d'hier et d'aujourd'hui* (1910).

JUL/LUNDER. See JALANDHAR.

JULY. See MONTH

JULY, COLUMN OF (Fr *Colonne de juillet*). A fluted column of bronze, on the Place de la Bastille in Paris, dedicated on July 28, 1840, to the "French citizens who fought for the defense of the public liberties on the memorable days of the 27th, 28th, and 29th of July, 1830." The column rests on a round base of white marble. Its square basement bears the inscription, a lion in relief by Barye, the armorial bearings of the city, and the dates of the conflicts. Four bands encircle the column, bearing the names of the 615 who fell in the Revolution. Their remains, together with those of the victims of the revolution of 1848, are contained in the vaults beneath the column.

JULY REVOLUTION. The revolution of July, 1830, in Paris which overthrew the Bourbon dynasty and brought the house of Orléans in the person of Louis Philippe to the throne of France. The policy of reaction following the Restoration, under Louis XVIII (1814-24), had become triumphant under his successor, Charles X, the creature of the clerical faction and the extreme Royalists. A partial indemnity was paid to the nobles whose lands had been confiscated, the Jesuits were readmitted to France, education was put under clerical supervision, and severe measures were enacted against the liberty of the press. These acts naturally aroused popular discontent, but Charles X boldly challenged liberal opinion in the country by calling to the head of affairs Count Jules Polignac, noted as the most bigoted of the advisers of the King (Aug. 9, 1829). Early in March, 1830, the French Chambers assembled, and the Lower House, in its answer to the speech from the throne, demanded the immediate dismissal of the new ministers. Thereupon the Chambers were first prorogued for six months and then dissolved, but the new elections only increased the strength of the opposition. Suddenly, on July 26, a few days before the new legislature was to assemble, edicts were promulgated suspending the liberty of the

press, declaring the elections null and void, and prescribing various changes in the franchise, which would have left little of self-government. The newspapers at once took up the challenge, and on July 27 there was some fighting in Paris. On the 28th the eastern section of Paris was filled with barricades; the insurgents took possession of the city hall and Notre Dame Cathedral and hoisted over them the tricolor. In vain the royal troops, who were under the command of Marmont, captured the different barricades; new ones were immediately built. The soldiers, worn out with their exertions and the heat, fired upon from windows and pelted with everything imaginable, abandoned the east of Paris and retreated. By July 29 the whole of Paris was in the hands of the insurrectionists, who had as their leaders the veteran Lafayette and Lafitte, only then did Charles X withdraw his Ordinances. But the adherents of the Duke of Orléans, Louis Philippe, demanded by means of placards posted everywhere that he should be made King. They had been long intriguing in secret under the leadership of Talleyrand, the old Minister of Napoleon I, who felt himself slighted by the Bourbons, whose restoration had to a great extent been his work. Now the Orleanists felt that their time had come, and late in the night of July 30 Louis Philippe arrived in Paris, and early the next morning was made lieutenant general of the realm. But the Orleanists, led by Adolphe Thiers and the banker Laffitte, were opposed by Lafayette, the commander of the restored National Guard, and the municipal committee, who were Republicans. Louis Philippe, however, won them over, and when Charles X, after abdicating in favor of his grandson, the Duke of Bordeaux, fled, the success of Louis Philippe was assured, and on August 7 the crown was voted to him by the Chambers. The July revolution was the work of the middle classes, who were then moderate Royalists, and the workmen of Paris, who were Republicans. The selection of Louis Philippe, the "Citizen King," and the adoption of a constitution based upon a property suffrage excluding the laboring classes from voting marked a great triumph for the bourgeoisie or middle classes. See FRANCE.

In other countries of Europe the July revolution caused serious disturbance. The first state to be influenced was Holland. Belgium for some time before 1814 had been united to France, but by the Congress of Vienna it was given to Holland. The Belgians revolted against the Dutch in 1830 and succeeded in establishing their independence. (See BELGIUM.) In Poland there was a violent uprising against Russian rule, which was suppressed only after heavy fighting. (See POLAND, RUSSIA.) In some other states there were revolutionary movements on a somewhat smaller scale, for which see GERMANY; ITALY. Consult: Fyffe, *History of Modern Europe*, vol. ii (London, 1886); Lavisse and Rambaud, *Histoire générale*, vol. x (Paris, 1898); Seignobos, *Political History of Europe since 1814* (New York, 1899); Robinson and Beard, *Development of Modern Europe* (2 vols., Boston, 1907-08); C. D. Hazen, *Europe since 1815* (New York, 1911).

JUMBO. A famous African elephant of gigantic size, captured when young and at three years of age transferred from the Jardin des Plantes in Paris to the Royal Zoölogical Gardens in London. For 23 years the animal was a

great favorite with English children, and his purchase by P. T. Barnum in 1882 for \$10,000 provoked a general protest. The animal was with difficulty placed on a steamer and brought to America, where for three years he formed one of the chief attractions of Barnum's circus. He was killed in 1885 while crossing a railroad track in Canada. Jumbo was 11 feet, 6 inches in height and weighed 6 tons. His skeleton is preserved in the Smithsonian Institution in Washington and his skin is mounted and stands in the British Museum at Tufts College.

JUMEL, ELIZA. See BURR, AARON.

JUMEL, zhōō'mā'. A town of Hainault, Belgium, 3 miles north-northwest of Charleroi, of which it is an important industrial suburb (Map. Belgium, C 4). It has extensive coal mines, iron furnaces, glass-making and other manufacturing establishments. Pop., 1900, 25,937, 1910, 27,956.

JUMILLA, hōō-mē'lyā. A town of the Province of Murcia, Spain, situated on the river Júcar, about 37 miles northwest of Murcia (Map. Spain, E 3). It is built at the foot of a hill on which are the ruins of a castle, and it has two handsome churches in Corinthian and Ionic architecture. The vine is well cultivated in the vicinity, and the town has some manufactures of soap and brandy. Pop, 1887, 14,334, 1900, 15,868; 1910, 17,467.

JUMMOO'. A town of British India. See JAMMU.

JUM'NA, or **JAMNA**, jūm'na (Skt. *Yamuna*). A river in India, the principal tributary of the upper Ganges, rising among the Jumnotri peaks in the Western Himalayas, at an altitude of about 11,000 feet. It flows at first south and then southeast through Agra, emptying into the Ganges at Allahabad. Its length is about 860 miles, and it receives a number of large tributaries, chiefly from the right, among which are the Chumbul, the Betwa, and the Ken. The traffic is slight, carrying timber on the upper reaches and stone, grain, and cotton on the lower. Above Agra during the hot season the river dwindles, owing to the Eastern and Western Jumna canals, which are fed by its waters and are used by light river craft and for purposes of irrigation. Both of them rejoin the Jumna at Delhi. In the upper half of its course the Jumna occupies a more prominent position than the Ganges itself, both historically and politically. It was the first to obstruct the path of every early invader from the northwest; hence on its banks were built Agra and Delhi, the two capitals of the Moslem conquerors of India.

JUMONVILLE, zhu'môn'vêl', N. COULON DE (1725-54). A French officer who fought in Canada. He joined his brother, a captain, in New France, and was himself the ensign in command of a scouting party of 35 men sent out from Fort Duquesne, the new post built by the French at the head of the Ohio River, to spy upon and if possible warn off an English expedition under Washington. The French and English were still nominally at peace, but these two parties had a skirmish in the woods (1754), in which Jumonville was killed, and this trifling engagement was the opening of the French and Indian War.

JUMPERS. A name given to certain Welsh Methodists, who indulged in leaping, dancing, and other bodily agitations in connection with their religious worship, citing in support of

their practice such passages as 2 Sam. vi. 16; Luke i. 41; Acts iii. 8. They are said to have originated in the congregations of Whitefield about 1760 and to have had followers among the Quakers and Irvingites. They were also called Barkers, because they accompanied the leaping and dancing with groans and incoherent utterances. Discountenanced in England, they emigrated to the United States. Consult Evans, *Sketch of the Denominations of the Christian World* (London, 1811), and Tyerman, *Life of John Wesley*, vol. ii (ib., 1870).—The name Jumpers is also given to a Russian fanatical sect whose alleged religious services consist in extraordinary leaping and are accompanied with physical exercises. Consult Heard, *The Russian Church and Russian Dissent* (London, 1887).

JUMPING BEAN. The seed of any one of several euphorbiaceous plants, including *Sebastiania bilocularis*, *Sebastiania palmieri*, *Sebastiania pringlei*, and *Colliguaja odorifera* (or *Croton colliguaja*), when infested by the full-grown larva of a small gray tortricid moth (*Carpacapsa saltitans*). The seeds are somewhat triangular and not only roll from side to side but move by jerks and jumps. The movements are produced by a plump whitish larva which occupies about one-fifth of the interior, the seed in fact being but a hollow shell lined with silk which the larva has spun. Late in the winter the larva cuts a circular door through the seed, strengthens it with silk and transforms to pupa, the moth soon afterward pushing its way through the prepared door. The larva of another moth (*Grapholitha sebastiania*) infests the seeds of *Sebastiania palmieri* and produces similar movements. These plants and insects are natives of Central and South America, and the imported seeds are frequently called Mexican jumping beans and in the southwestern United States broncho beans.

JUMPING FISH. See MUDSKIPPER.

JUMPING FROG OF CALAVERAS, THE CELEBRATED. A sketch by Mark Twain (1867), written for the *Californian*. It was his first work to attract wide attention.

JUMPING HARE. A South African rodent (*Pedetes caffer*), the springhaas of the Dutch colonists, which is placed near the jerboas in systems of zoology, but considerably differs from them in that it is larger—as big as a rabbit. It is the sole representative of the family Pedetidae. The head much resembles that of a hare, although the ears are shorter; the form of the body is also like that of a hare, but the hind legs are very long and strong, like those of a kangaroo, and the toes both of fore and hind feet are armed with great claws. Its powers of leaping are extraordinary; it clears 20 or 30 feet at a bound and can make faster time up a slope than down. Three or four young are born at a time. Night is the time of activity, and it makes mischievous inroads on fields and gardens. Its flesh is eaten.

JUMPING MOUSE. One of the most common, interesting, and widespread of North American wild mice (*Zapus hudsonius*), scientifically regarded as a jerboa. (See JERBOA, and Plate of MICE AND JERBOAS.) It takes its name—also that of kangaroo mouse—from the long and strong hind legs and its habit of running in long leaps. It inhabits brushy places by preference and lays up no store in winter, but constructs a warm, ball-like nest, placed in some thick bush or often within an abandoned

bird's nest, where it hibernates during the cold months in a dormancy more profound than that of any other American animal. It is a yellowish-grizzle color above and white underneath and has a very long tail. It is limited to the eastern half of the United States, but similar species exist in western North America and in Europe.

JUMPING PLANT LOUSE. An hemipterous insect of the family Psyllidæ, distinguished from the true aphids by the swollen hind thighs, giving this insect its power as a jumper, by the two-jointed feet, and by antennæ with eight or nine joints. Many of the species live exposed upon the leaves of trees and plants, like the pear tree *Psylla*, while others form galls in which they live, such as several of the species which feed upon the hackberry. Most of the jumping plant lice secrete quantities of honeydew (q.v.). The eggs of *Psylla pyricola* (and probably of many other species) are attached to a leaf by a short arm, and each has a long hair-like stalk projecting from its end. There are several generations each year, and the adults hibernate.

JUMPING SHREW. An African shrew of the family Macroscelidæ, so called because of the large hind legs and leaping method of progression. The group are also known as elephant shrews (q.v.). The family is represented in all parts of Africa, but not elsewhere, and the most remarkable species are those of the South African genus *Rhynchocyon*, some of which reach a length of 8 inches, besides the long, scaly tail. Their noses are prolonged into tubular nostrils almost as flexible as the trunk of an elephant. They inhabit dry, rocky places, are not numerous, and little is known of their habits.

JUMPING SPIDERS. Any of the medium-sized spiders with short legs of the family Attidæ. They capture their prey by leaping upon it. Many of them are brightly colored and live in open places among the tops of low plants. They walk backward or sidewise as well as forward, and some of them jump great distances. They do not spin webs, but some of the species fix a thread to the point from which they leap, so that, should they miss their aim, they will not fall far. Some of the species are very common and may be seen hunting on foliage, fences, or on almost any exposed surface. Consult: H. C. McCook, *American Spiders and their Spinning Work* (3 vols., Philadelphia, 1889-93); J. H. Emerton, *Common Spiders* (Boston, 1902); J. H. Comstock, *The Spider Book* (New York, 1912).

JUNAGARH, जूनार-गढ़. A native Gujarat state of the Kathiawar Peninsula, Presidency of Bombay, India. Area, 3284 square miles. Pop., 1901, 395,428; 1911, 434,122. The surface generally is level, diversified to the north by the Girnar Hills, with a maximum altitude of 3666 feet. Cotton, sugar cane, and cereals are cultivated. The Gir district contains about 1200 square miles of forest land. Junagarh ranks as a first-class native state, and its alliance with Great Britain dates from 1808, when the then chief agreed with the Bombay government to oppose piracy and allow free commerce with British vessels on the payment of stipulated duties (capital, Junagarh (q.v.)).

JUNAGARH, जूनार-गढ़. The capital of a native Gujarat state of the same name in the Bombay Presidency, India. It is situated on

the Rajputana Railway, 45 miles north of Veraval, on the Arabian Sea. In the midst of the big-game grounds of the Girnar and Datar Hills, its site is very picturesque. Its royal tombs, Buddhist caves, also the Uparkot, an ancient citadel of the great Asoka (250 B.C.), and the town fortifications, built in 1472, are archaeologically interesting. The modern buildings include the Nawab's palace, the College of Arts (built in 1900), a hospital, a library and museum, and fine modern shops and stores. Pop., 1901, 34,251; 1911, 35,413. Consult Burgess, *The Antiquities of Cutch and Kathiawar* (London, 1887).

JUNCO (Neo-Lat., of uncertain derivation). The generic and now the popular name for the so-called "black" snowbirds of the United States familiar in winter. Half a dozen species are named, besides almost three times as many subspecies, all of which intergrade with one another in a most perplexing manner. One well-marked species (*Junco hyemalis*) belongs to the eastern United States, but all the others are residents of the mountainous portions of Mexico and the western United States. All are small finches, dark slate or ashy above and more or less white below and the beaks white. The nests are built on or near the ground, of grasses, mosses, and rootlets, and are often lined with hairs. The eggs are from four to five in number, bluish white, speckled at the larger end with brown. The common junco of the East is grayish slate color on the head, back, throat, and breast, and pure white on the belly, the contrast between the two colors being very sharp; the two outer tail feathers are white and are conspicuous when the bird flies. It is a common winter visitor as far south as the Gulf of Mexico, and a summer resident from northern New York and Minnesota northward and in the mountains as far south as the Carolinas. It breeds in a nest on the ground, hidden among thickets. See Plate of SPARROWS.

JUNCOS, हूण'कός. A town in the eastern part of Porto Rico (Map: Porto Rico, F 2). It has a hospital, good schools, and electric lights. The principal products of the district are sugar cane, tobacco, and tropical fruits, the chief industry is the manufacture of sugar. Pop., 1910, (municipal) 11,692, (urban) 4141.

JUNCTION CITY. A city and the county seat of Geary Co., Kans., 72 miles by rail west of Topeka, at the confluence of the Smoky Hill and Republican rivers, which here unite in the Kansas River, on the Union Pacific and the Missouri, Kansas, and Texas railroads (Map: Kansas, F 4). It is a shipping point for grain, flour, live stock, crushed rock and sand, and produce from the surrounding country, and has extensive limestone quarries, boot and shoe, glove, cigar, candy, sheet-metal, cement-block and harness factories, flour mills, lumber yards, etc. Fort Riley (q.v.), a large government military post, is 3 miles east of the city. The city owns and operates its water works. Junction City was settled in 1858, was chartered as a city the following year, and adopted the commission form of government in 1911. Pop., 1900, 4695; 1910, 5598.

JUNE. See CALENDAR.

JUNE, JENNIE. The pseudonym of the American writer Jane Cunningham Croly (q.v.).

JUNEAU, जून'नो. The capital of Alaska, 100 miles north by east of Sitka, on Gastineau Channel, opposite Douglas Island (Map: Alaska,

N 6). It is the seat of the Territorial Legislature and courts and Federal officials and is by far the most important city of south Alaska. The population was 1645 in 1910, but more than 5000 permanent white inhabitants were then in the city and its immediate vicinity. The population of the city in 1914 was estimated at 4000. Juneau is modern as to its churches, schools, hospitals, newspapers, fire department, police, drainage, water works, telephonic, telegraphic, and electric services. Its banks, assay office, trading and manufacturing facilities, make it the commercial and supply depot for adjacent mining camps, and it is the transportation centre of south Alaska, steamship lines connecting it with Seattle, Sitka, Skagway and all ports of the Copper River, Prince William Sound, Cook Inlet, and Unalaska regions. More than \$60,000,000 of gold have already been mined from the region in and about Juneau, principally from the famous Treadwell mines, and experts consider that extensions and developments will make it the centre of the most productive areas of gold yields in North America. Consult A. W. Greely, *Hand-Book of Alaska* (New York, 1914).

JUNEAU, LAURENT SOLOMON (1793-1856). An American pioneer, founder of Milwaukee, Wis. Born at L'Assomption Parish, near Montreal, Canada, Aug. 9, 1793, he early went to Green Bay, then a point of importance, and on Sept. 14, 1818, settled at Milwaukee as an Indian trader. He served as agent of the American Fur Company and was the trusted friend of John Jacob Astor and Ramsay Crooks of that great monopoly. He was the first white man to settle in Milwaukee, numerous temporary settlers had preceded him. Among them was Jean Baptiste Mirandeu, a gunsmith, who took up residence about 1790. To Mirandeu cession was made by the Indians of a large tract of land previous to its transfer to the United States government by treaty. Mirandeu's death occurred in March, 1819, when his affairs were yet unsettled, and Juneau obtained possession of the original Indian grant. He caused to be executed the first survey of the village, promoted the building of its first bridge, and was its first postmaster and president. In 1846 he was elected first mayor of the city. With Morgan L. Martin, he donated the ground for the first public square in Milwaukee, and upon it was built the first courthouse in Wisconsin. Unskilled in financial matters, he afterward lost possession of his lands and the wealth thereby represented. He died Nov. 14, 1856. Juneau had 15 children, whose descendants are widely scattered. A bronze statue of him (unveiled July 6, 1887) is in Juneau Park, Milwaukee, overlooking Lake Michigan.

JUNE BEETLE. A name in the southern United States for a green and brown cetonian beetle (*Allorhina mrida*), also known as fig eater. The term is also occasionally applied in the North to the scarabæoid beetles of the genus *Lachnosterna*, which, however, are more properly called May beetles. (See JUNE BUG.) The June beetle is a native of the southern and central United States and in its adult condition feeds upon ripe figs, peaches, pears, plums, and small fruits, such as raspberries and blackberries. It also feeds occasionally on ears of corn and sucks the sap exuding from wounds in the branches of trees. It is nearly as beautiful in color as some of the me-

tallic Brazilian beetles which have been used in jewelry and is a favorite plaything with children, who tie strings to the body and let the beetles fly with a humming noise. In its larval condition it is a white grub, closely resembling the white grubs of the Northern States, but is not nearly so injurious. The white grubs of the June beetle live at or below the surface of the ground, and frequently occur in countless numbers in grass lawns, in strawberry and celery beds, and everywhere where the soil is very rich and the vegetation is vigorous. It is doubtful, however, whether they do any serious damage. Their normal food is decaying vegetation—soil humus. They may occasionally cut off the root of a plant, but are surely not especially injurious in grass lands, although of some damage to celery by soiling the stalks. Where June beetles are numerous and are damaging ripe fruit, they may be attracted in numbers to a little heap of spoiled fruit which has been sprinkled with Paris green and thus may be destroyed.

JUNE BERRY. A North American edible fruit and the tree named from it. See AMELANCHIER, SHADBUSH.

JUNE BUG, or MAY BEETLE. Any one of the large, clumsy scarabæoid beetles of the genus *Lachnosterna*, common in the United States. The adult beetles often do considerable damage to the foliage of young fruit and shade trees, swarming after dark and feeding upon the young leaves, especially in the months of May and June. They are commonly attracted to lights and are familiar objects in houses in June during early summer, buzzing about the light and white walls and frequently falling to the floor. The larvæ are large white grubs which live beneath the surface of the soil and damage the roots of grasses and other plants. When numerous, they are very injurious to the sod of lawns and meadows, cutting off the roots just below the surface of the ground, so that a close sod may be rolled up like a carpet. The best remedy against the larvæ consists in washing a dilute kerosene soap emulsion down into the ground, and for the adults in attracting them to lights placed over pans containing kerosene.

JUNE GRASS. A meadow grass especially valuable for limestone soils. See BLUE GRASS.

JUNG, zhŭn, HENRI FÉLIX THÉODORE (1833-96). A French general and writer upon military subjects, born in Paris. He was educated at Saint-Cyr, entered the artillery in 1853, and spent the next five years in Africa. After taking part in the campaign in Italy, where he was awarded the cross of the Legion of Honor for gallantry at Solferino, he entered the council of the War Minister Lebeuf (1869), but returned to active service during the Franco-Prussian War, rose in his profession till he became brigadier general in 1887, and was appointed Governor of Dunkirk, but retired in 1891. In 1895 he became director of the *Intermédiaire des Chercheurs et des Curieux*. His publications, under his own name or the pen name of Mustapha, include a number of works upon the science of warfare, such as *Le dépôt de la guerre* (1872) and *La république et l'armée* (1892), as well as *La vérité sur le masque de fer* (1873); *France et Rome* (1874); *Bonaparte et son temps* (1880-81); *Lucien Bonaparte et ses mémoires* (1882-83); and a biography of Dubois-Crancé (1884).

JUNG, yung, **JUNGE**, yung'e, or **JUNG-GIUS**, yun'gi-us, JOACHIM (1587-1657). A German mathematician and naturalist, born at Lübeck. He was educated at Rostock, was professor of mathematics at Giessen in 1609-14, obtained his doctorate in medicine at Padua in 1618, and became professor of mathematics at Rostock in 1625. In 1628 he was appointed rector of the Hamburg Johanneum and resigned the post in 1640. In natural science he concerned himself with physics and more particularly with entomology and botany. He was the first to attempt a classification of plants by genera and species and antedated Linnaeus in a scheme of nomenclature. After long neglect attention was called to him by Goethe. His chief work is his *Doxoscopix Physicæ Minoris, seu Isagoge Physica Doxoscopix, in qua Præcipuæ Opiniones in Physica passim Receptæ, Breviter Quidem sed Accuratissime Examinantur* (1662). Consult *Martini Fogelin Memoria J. Jungi* (Hamburg, 1657); *Goethes Fragmente über Jungius* (Stuttgart and Tübingen, 1850); Avé-Lallemant, *Des Dr. Jungius' Briefwechsel* (Lübeck, 1863); id., *Das Leben des Dr. Jungius* (Breslau, 1882).

JUNG, JOHANN HEINRICH (1740-1817). See JUNG-STILLING, JOHANN HEINRICH.

JUNG, jüŋg, SIR SALAR (1829-83). An East Indian prince, Premier of the Deccan from 1853. For more than a century his family had occupied the highest positions of state, and Salar began his official career as assistant and successor to his uncle. He found civil and military affairs in a most disorderly condition when he came into power, but he succeeded in reorganizing them, and by keeping Hyderabad quiet during the mutiny he saved the dominion from annexation to British India, except the Province of Berar, which the Nizam had given up in return for the English gold granted to pay his own troops. He was made Knight Grand Commander of the Star of India, and visited England in 1876.

JUNG BAHADUR, ba-hä'dur, SIR, MAHARAJAH (1816-77). An East Indian ruler. In 1843 he became general and chief judge of Nepal under the premiership of his uncle, Matabar Singh; and he was a member of the succeeding ministry of Fateh Jung. In 1846 Jung Bahadur was appointed Prime Minister of Nepal. Despite many attempts to assassinate him, he remained in office, and his power was well-nigh absolute, for the rani (who had first plotted his murder) and the rajah fled the country. Jung Bahadur visited England in 1850; he reformed the penal code of Nepal and Indian mutiny of 1857-58 supported For his services he was knighted and was honored with a visit from the Prince of Wales in 1876, and concessions of territory were made to Nepal.

JUNGBUNZLAU, yung-bunt's'lou. A town of Bohemia, situated on a cliff above the Iser, 31 miles northeast of Prague (Map: Austria, D 1). The old and new towns and two suburbs contain an old and a new town hall, a castle built in the tenth century by Boleslas II (now used as barracks), four old churches, a hospital, a museum, a Piarist college, a Gymnasium, a trade and an agricultural school. The town manufactures earthenware, glass, woollens, textiles, car wheels, candles, starch, spirits, and soap. Pop., 1900, 13,500; 1910, 16,337.

JUNGERMANNIALES. See HEPATICÆ.

JUNGFRAU, yöŋg'frou (Ger., maiden). A pyramidal peak of the Finsteraarhorn group in the Bernese Alps, Switzerland, situated on the south boundary of the Canton of Bern, 8 miles west of the Finsteraarhorn (Map: Switzerland, B 2). Its height is 13,670 feet, and it falls steeply on the north and east, its slender and majestic form, and the pure whiteness of the snow with which it is covered, having given it its name. It was first ascended in 1811 by Swiss. In recent years the ascent has been made frequently. The construction of an electric rack-and-pinion road to the summit has been in progress since 1897, and the tunnel station of Jungfrauoch (11,340 feet) was opened in 1912. The remaining distance to the summit is designed to be by lift.

JUNGFRAU VON ORLEANS, yung'frou fön ör'lä'an', DIE (Ger., The Maid of Orléans). A noted romantic tragedy by Schiller, completed in 1801.

JUNGHANS, yung'häns, SOPHIE (1845-1907). A German novelist, born at Cassel. She was well educated, lived some years in England and Italy, and in 1877 married Joseph Schuhmann, a professor at Rome, from whom she separated in 1880. She had written and published poetry and tales from 1869 to 1873, but did not become generally known until 1876 when *Kathe, Geschichte eines modernen Madchens*, appeared. Her other works in the same genre include *Hans Eckberg* (1878), an historical novel of the Thirty Years' War; *Die Erbin wider Willen* (1881); *Die Gäste der Madame Santines* (1884); *Der Bergrat* (1888); *Zwei Brüder* (1889); *Zu rechter Zeit* (1892); *Um das Glück* (1896); *Junge Leiden* (1900); *Hymen* (1902); *Wiesel* (1908); *Gelubde* (1908); *Der geraubte Schleier* (1910).

JUNGHUEN, yung'hoon, FRANZ WILHELM (1812-64). A German physician and naturalist, born at Mansfeld. He studied medicine botany, and geology at Halle and Berlin; commenced his professional career as a surgeon in the Prussian army, afterward joined the French forces in Algeria as a sanitary officer, and finally settled in Java. In the latter country he made valuable researches into the geological, geographical, and botanical resources of the land, and his published works on the subject are highly prized. He visited Holland from 1849 to 1855, but returned to Batavia, where he died. His principal works include *Java seine Gestalt, Pflanzendecke und innere Bauart* (4 vols., 1850-54), and *Die Battalander in Sumatra* (1847). A description of his collection of fossil plants, *Plantæ Junghuhnianæ* (1851 et seq.), was undertaken by several naturalists.

JUNGIUS, yun'gi-us. See JUNG, JOACHIM.

JUNGLE (Hindi *jāngal*, from Skt. *jāngala* desert). A term employed to designate those often almost impassable thickets of trees, shrubs and reeds which abound generally upon swampy land in many parts of India, and particularly in the unhealthy tract called Terai or Tarayani along the southern base of the Himalayas, and in the Sunderbunds at the mouth of the Ganges. The jungle flora and fauna are very peculiar; tigers and other beasts of prey, elephants, boars, deer, monkeys, and other quadrupeds, with gigantic snakes, are found in great numbers in these thickets. The moisture and heat carry tropical vegetation beyond its usual limit northward to the lower valleys of the Himalayas.

JUNGLE BOOK, THE. Stories for children.

by Rudyard Kipling, published in *Saint Nicholas*, and collected in two volumes in 1894 and 1895.

JUNGLE CAT, or **CHAUS**, kă'ūs. A well-known wild cat (*Felis*, or *Chaus*, *chaus*) of India, met with in all forested parts from Ceylon to an elevation of 8000 feet on the Himalayas. It is about 26 inches long and has a tail 9 or 10 inches long. In color it is yellowish gray, more or less dark and unspotted, and becoming reddish on the sides of the neck and abdomen; a dark stripe runs from the eyes to the muzzle, and there are obscure bars on the limbs and tail, the ears are reddish black outside, white inside, and slightly tufted. A whitish-brown spotted cat (*Felis ornata*) of the same region is sometimes called the "ornate jungle cat." Both species interbreed with domestic cats. See CAT, and Plate of WILD CATS.

JUNGLE FEVER. Pernicious malarial fever of the East Indian jungles. It was probably first named and described by British residents in India, who fell victims to it. The fever is a tropical malaria due to infection with the æstivo-autumnal parasite. Travelers or new residents are more likely to suffer from it than natives. Its symptoms are grave prostration, impaired memory, somnolence, severe headache, disturbed vision, stupor, and delirium, with a fever of intermittent type. Fatal collapse may occur in three days; or the fever may cease in a few hours, or a second and third attack may follow. Quinine is the most successful drug in the treatment of jungle fever. See MALARIA.

JUNGLE FOWL. A typical gallinaceous bird of the East Indian genus *Gallus*, regarded as the source of our domestic fowls. Four species are known—one (*Gallus varius*) in Java and the islands eastward, another (*Gallus lafayetti*) in Ceylon, a third, the "gray" (*Gallus sonnerati*), and fourth, the red jungle fowl (*Gallus bankiva*, or *gallus*) of northern India and eastward to Cochin-China and the Malay Peninsula. The wild birds have been introduced into Hainan, Java, the Philippines, and elsewhere. This species strongly resembles in plumage the modern black-breasted game fowl, and this is especially true of the variety found in the Malay Peninsula, where, according to tradition, fowls were first domesticated. From that country, it is believed, they were taken to China and domesticated, thereby forming the original barnyard poultry. These wild game fowls live in the forests, not gregariously, but in pairs or small parties, but often come out to feed in cultivated fields and show themselves strong fliers and fast runners. They eat almost everything, and their flesh is excellent. The crow of the cock is short and broken, like that of some bantams, but the cackling and clucking of the hens are similar to those of domestic fowls. Four to seven white eggs are laid in a hollow scratched out at the base of a tree or under a bush.

JUNGLE GHOU, or Ox. A variety of the gayal (q.v.), inhabiting Sylhet and other mountainous parts of the northeast of India.

JUNGLE SHEEP. A sportsman's name for the goatlike animal of the Himalayan region (*Hemitragus hylocrius*). It is called warri-atu by the Tamils and Nilgiri ibex by English sportsmen.

JUNGSMANN, yung'man, JOSEF JAKOB

(1773–1847) A Czech philologist, born at Hudlitz, Bohemia. He studied philosophy and law in Prague, taught at the Gymnasium at Leitmeritz from 1799 to 1815, and thereafter at the Altstädter Gymnasium in Prague, of which he was rector from 1835 until 1845, when he retired. He contributed greatly to the revival of the Czech national sentiment and especially to the intellectual reawakening of his people after a protracted period of inactivity. In order to demonstrate the capabilities of the Czech tongue, he first undertook the translation of some masterpieces of foreign literatures, the most notable of which was that of Milton's *Paradise Lost*, begun in 1800 and published in 1811. This was followed by Chateaubriand's *Atala* (1805), Goethe's *Hermann und Dorothea*, and others. These works may be considered to have laid the foundation of the modern Czech literary style. With Johann Preisl he founded in 1821 the *Krok*, the first scientific periodical in the Czech language. His next important work was a *History of the Czech Literature and Language* (1825), but the crowning effort of his life was the monumental *Slovník Českého jazyka* (1835–39), a complete dictionary of the Czech language, for which he had collected the material for more than 30 years. This work is most important for the comparative philologist. His *Memoirs* were published posthumously.

JUNG-STILLING, yung-shtil'ing, JOHANN HEINRICH (1740–1817). A German author, born at Grund in Westphalia. His original name was Jung. He was a charcoal burner, then a tailor's apprentice, and in 1770 went to Strassburg to study medicine. There he became acquainted with Goethe. He practiced at Elberfeld till 1778, achieving renown by his operations for the removal of cataract, and taught political economy at Kaiserslautern, Heidelberg, and Marburg. He was pensioned by the Grand Duke of Baden and made Privy Councillor. His most important work is his mystic autobiography, which appeared in a series of five works: *Heinrich Stillings Jugend* (1877), *H. S. Junglingsjahre* (1778); *H. S. Wanderschaft* (1778); *H. S. häusliches Leben* (1789), *H. S. Lehrjahre* (1804). These appeared in revised form under the title, *Heinrich Stillings Leben, eine wahre Geschichte* (5 vols., 1806). His grandson Schwarz added the volume *Heinrich Stillings Alter* (1817). His other works are the novels: *Geschichte des Herrn von Morgenthau* (1779), *Geschichte Florentins von Fahlendorn* (1781–83), and *Erzählungen* (1814–15); and on purely mystical subjects: *Theobald* (1784–85; in English, 1846), *Theorie der Geisterkunde* (1808; in English, 1834), and *Scenen aus dem Geisterreiche* (1797–1801). His collected works were published at Stuttgart (15 vols., 1835–39). Consult Petersen, *Jung-Stilling* (Copenhagen, 1890), and Goethe, *Dichtung und Wahrheit* (4 vols., Weimar, 1811–14).

JUNIATA, joo'ni-at'a. A borough in Blair Co., Pa., 1 mile north of Altoona, on the Pennsylvania Company Railroad (Map: Pennsylvania, E 6). It has railroad repair shops and silk mills. Juniata is governed by a council and burgess. The water works are owned by the borough. Pop., 1900, 1709; 1910, 5285.

JUNIATA COLLEGE. A coeducational institution of higher learning at Huntingdon, Pa., founded under the auspices of the church of the Brethren (Dunkers) in 1876. The college began with three students and one teacher in two

rented rooms. It now occupies a campus of 23 acres, with eight substantial buildings of brick and stone. In the college proper there is a four-year course, leading to the degree of bachelor of arts. It has also a preparatory course, a School of Education, and schools of Bible, Music, and Business. The institution places emphasis on the religious side of education and exercises a careful supervision over its students. It had, in 1914, 422 students and 22 instructors. The endowment in 1914 was \$186,000, and the college property was valued at \$250,000. The library contained 26,000 volumes and 4000 pamphlets. The president in 1914 was I. H. Brumbaugh, A.M.

JUNIATA RIVER. A river of Pennsylvania, and the principal tributary of the Susquehanna below the West Branch (Map: Pennsylvania, F 6). It has its sources in Bedford, Blair, and Somerset counties, the chief of its head streams being the Frankstown and the Raystown branches, both of which, like the main stream, flow through much wild and beautiful country. Its course, which is exceedingly sinuous, is generally northeast and then east until it enters the Susquehanna at Duncan's Island, about 13 miles northwest of Harrisburg. Its total length is about 200 miles, and its average fall $3\frac{1}{2}$ feet to the mile. Consult Hoyt and Anderson, *Hydrography of the Susquehanna River Drainage Basin*, United States Geological Survey, Water Supply and Irrigation Paper No. 109 (Washington, 1905).

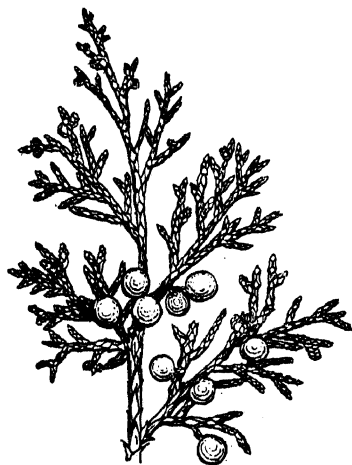
JUNILIUS. A bishop of Africa, who flourished in the sixth century. He was the author of *Instituta Regularia Divinae Legis* (c.550), one of the earliest introductions to the sacred writings. Junilius himself claimed no originality, but in the introduction to the work stated that he was indebted for the greater part of its contents to a certain Paulus of Persia, supposed to have been Paulus of Bassora, who afterward became Metropolitan of Nisibis. In this work, which is generally called *De Partibus Divinae Legis*, Junilius does not enumerate the Chronicles, Ezra, Nehemiah, Job, Judith, Esther, or the Maccabees among canonical books. Consult the edition by Kilm (Freiburg, 1880); Beeker, *Das System des Kirchenvaters Junilius* (Lübeck, 1787); Kilm, *Theodor von Mopsuestia und Junilius Africanus* (Freiburg, 1880).

JUNÍN, hōō-nén'. An inland department of Peru, bounded by the Department of Huanuco on the north, Cuzco on the east, Ayacucho and Huancavelica on the south, and Lima on the west (Map: Peru, B 6). Area, 23,347 square miles. One of the Andes ranges traverses the department through the centre and divides it into two parts—the western being elevated; the eastern lower and thickly wooded, known as the hot Montaña. Agriculture is in a backward state, the chief products being cereals, sugar cane, and coffee. The mineral wealth consists of silver, copper, coal, and salt, but even the rich deposits of silver which are found in the Cerro de Pasco are neglected. A railroad connects the southern part of the province with Lima on the coast, and several extensions of this line have been projected, which will open communication with the eastern and northern departments. Pop. (est.), 394,000. Capital, Cerro de Pasco (q.v.).

JUNÍN, or CHINCHAYCOCHA, chēn'chik'chá. A lake in the Department of Junín, Peru, situated at an altitude of 13,000 feet. It

is about 37 miles long and 7 miles wide and is drained by the Mantaro River. There are several towns on its shores, and small steamboats ply on it.

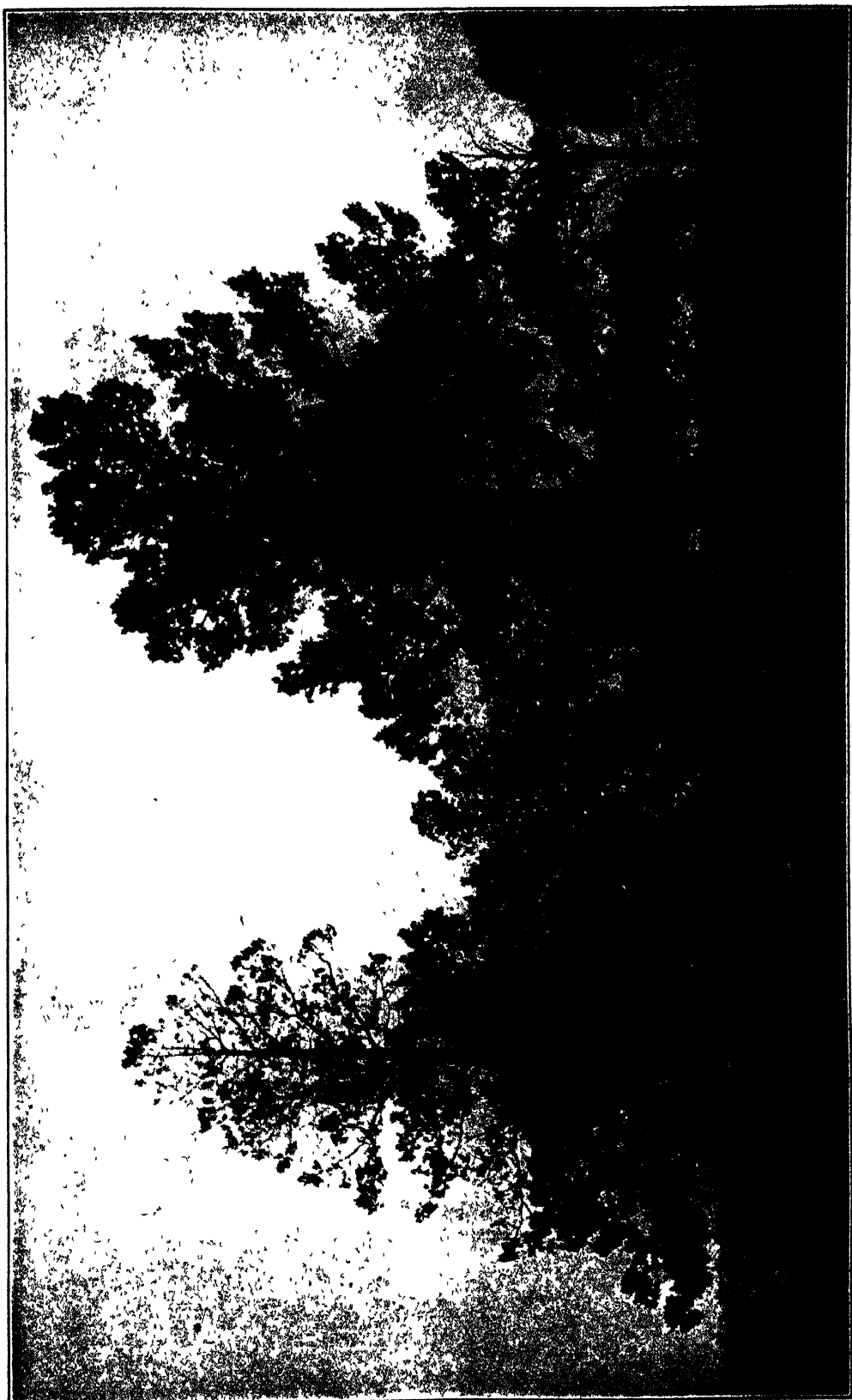
JUNIPER (older forms *gynypre*, *jenepere*, from OF. *geneivre*, *geneivre*, It. *ginepro*, *giunipero*, from Lat. *juniperus*, *juniperus*, probably for *junonipirus*, Juno's pear, from *Juno*, *Juno* + *pirus*, pear; also explained as being from *juvenis*, young, and *pirus*, pear; hardly connected with *parere*, to produce), *Juniperus*. A genus of evergreen trees and shrubs belonging to the Coniferales, the largest order of gymnosperms. Junipers number about 30 species, which occur in the mountains and extratropical regions of the whole Northern Hemisphere and constitute the largest genus of the tribe Cupressineæ, a tribe distinguished among conifers by its cyclic (opposite or whorled) leaves. While in the common juniper (*J. communis*) the leaves are spreading needles, in many species the leaves appear as small, overlapping green scales, attached to the stem by one face (conescent). The stamens and carpels occur in different cones, and the two kinds of cones are usually upon different plants. A peculiarity of the junipers is that the small carpellate (seed-bearing) cone ripens fleshy, forming the so-called juniper berry, which of course is not a true berry. The common juniper (*Juniperus communis*), common to northern high latitudes, rarely exceeds a height of 30 feet and in general is only a shrub from 2 to 6 feet high. The abundant, round, bluish-



JUNIPER.

black currant-like fruit takes two years to ripen. On the shell of the nuts are three glands, which abound, especially before ripening, in an essential oil—oil of juniper—present also particularly in the young wood. The wood is yellowish red, brownish in the heart, hard, and fragrant. When of sufficient size, it is much valued for turning and veneering. The dry twigs, roots, and berries are used for fumigation. The berries, which have a strong and peculiar flavor, are much used for flavoring gin, which derives its name from them. They also enter into several medical preparations, being stimulant, sudorific, and diuretic. The bark of juniper may be made into ropes, and in some parts of the Highlands of Scotland the roots are woven into coarse baskets. Oil of juniper, on

JUNIPER



which the medicinal properties of the plant depend, has a specific gravity of 0.839. It is obtained by distilling the unripe fruit or the twigs with water. Six drops are a dose. Spanish juniper (*Juniperus oxycedrus*) grows in arid situations in the countries around the Mediterranean Sea. From its fruit, which is about the size of a hazelnut, and its wood is procured an essential oil of disagreeable odor, called *huile de cade*, which is used in veterinary practice, particularly as a cure for scab in sheep. Virginian juniper (*Juniperus virginiana*), the red cedar, or savin, of North America, is a tree, often 50 to 100 feet high, of conical form, with horizontal branches and very small leaves. Its range is from Lake Champlain to the Gulf of Mexico in sandy or rocky places. It is often planted in pleasure gardens in Europe. The berries are small and bright blue. The heart wood is of a beautiful red color, is valued by turners, coopers, etc., and is extensively used for making lead pencils. The wood is very resistant to decay and on this account is in demand for fence posts. There are often found on the branches gall-like hypertrophies called cedar apples, which are induced by one stage in the life history of the fungus causing apple rust. (See *APPLE, Diseases*.) The Bermuda cedar (*Juniperus bermudiana*), a native of the Bermudas, is a small tree, with very fragrant, reddish-brown wood, which is used for furniture, pencil making, etc., and also for lining cabinets, its odor . . . acks of moths and other insect . . .

Moun-
tains produce several species of juniper—trees of considerable size, beautiful appearance, and valuable wood. The Swedish juniper of our shrubberies is merely a variety of the common juniper. There are a number of other species of *Juniperus* of similar habit and use throughout the world, also many dwarf species that are procumbent or trailing. Among the larger tree forms are *Juniperus chinensis*, *Juniperus ex-celsa*, and *Juniperus recurva* of Asia, *Juniperus procera* of Abyssinia, and *Juniperus californica*, *Juniperus occidentalis*, and *Juniperus mexicana* of the western United States and Mexico. There are also numerous horticultural varieties in cultivation.

JUNÍPERO, *hōō-né'pá-rō*, MIGUEL JOSÉ SERRA (1713-84). A Franciscan missionary to the Indians of California. He was born on the island of Majorca in the Mediterranean, and when he became a priest (1730), he exchanged his baptismal name, Miguel José Serra, for the clerical one, Junípero. At the age of 36 he sailed as a missionary to the Spanish colonies in America, and from 1750 until 1769 he ministered to nomadic tribes of aborigines in Mexico. Upon the expulsion of the Jesuits from Lower California Father Junípero was ordered to take up their relinquished work, and while he was president of the California missions there were founded the missions of San Diego (1769), San Carlos (1770), San Antonio (1771), San Gabriel (1771), San Luis Obispo (1772), San Francisco (1776), San Juan Capistrano (1776), Santa Clara (1777), and San Buenaventura (1782). He made many long and toilsome wilderness journeys to other stations, but his particular charge was the San Carlos Mission at Monterey, and he had under him 16 missionaries of the Order of St Francis, who by 1780 had converted more than 3000 Indians, instructed them in the arts of peace, and per-

sueded them to give up their wanderings to form agricultural colonies around the different missions. These in turn required military stations or presidios for their protection, and thus the settlement of California was begun. Father Junípero was buried in his own church at Monterey, now in ruins, and Father Palon, his assistant and successor, one of the three enthusiasts who came out with him to America, left behind an interesting memoir, called *Vida de Junípero*. Consult: G. W. James, *Old Missions and Mission Indians of California* (Los Angeles, 1895); B. J. Clinch, *California and its Missions*, vol. ii (San Francisco, 1904); Zephyrin Engelhardt, *Missions and Missionaries of California*, vol. ii, part i (ib, 1912); G. W. James, *Old Franciscan Missions of California* (Boston, 1913).

JUNIUS, *yōō'né-us*, FRANCISCUS, THE YOUNGER (1589-1677). A German philologist and antiquary. He was born at Heidelberg, the son of Franciscus Junius the theologian. The family having removed to Leyden in 1592, he studied there under his brother-in-law, the celebrated philologist Gerhard Vossius. In 1620 he visited France and in 1621 went to England, where he was appointed librarian to the Earl of Arundel and held that office for 30 years, during which time he studied the Teutonic languages. His greatest work was his *Glossarium Gothicum* (1664-65), in five languages, the English portion of which has been issued separately as *Etymologicum Anglicanum*. He also wrote *De Pictura Veterum* (1637), with an English translation by himself, and published the first edition of the *Gothic Gospels of Ulfilas* (1665), with a commentary. He left his valuable manuscripts to the Bodleian Library, Oxford.

JUNIUS, *jōōn'yūs*, LETTERS OF. A famous series of 70 letters signed "Junius," which appeared in a London newspaper, the *Public Advertiser*, between Jan. 21, 1769, and Jan. 21, 1772. The signature "Junius" had appeared for the first time on Nov. 21, 1768, when Grafton and Camden were assailed for their behavior towards Wilkes. Revised by the author, the *Letters* were reprinted March 3, 1772, by Henry S. Woodfall, editor and printer of the *Advertiser*. In 1812 appeared a new edition, containing 113 additional letters variously signed, which were attributed to the author of *Junius*. The first letter in the first collected edition, which treats of the "State of the Nation," strikes the keynote of the subsequent correspondence. In it the author singles out several leading members of the ministry and boldly denounces their inefficiency. No sooner did the first letter appear than the court party took the alarm. An invisible and dreaded censor was evidently moving among them—one who seemed cognizant of all the proceedings of both Houses, who not only knew intimately the public career of ministers, but was fully informed regarding the follies and the crimes of their private lives. Sir W. Draper, who entered into controversy with this unknown adversary, was in the end overmastered. The Duke of Bedford, Lord Mansfield, and, chief of all, the Duke of Grafton, writhed beneath his lash. The greatest sensation was created by the "Address to the King" (Dec. 19, 1769), in which King George was reminded of the fate of Charles I. Woodfall, as printer and publisher, was prosecuted, but acquitted on a technicality. The style of these letters, though somewhat stiff and

formal, is remarkable for closeness of argument, felicity of illustration and allusion, and brilliant epigram. Whoever Junius was, he had made too many enemies to be safe in acknowledging himself. The letters were ascribed in turn to Burke, Lord Shelburne, Colonel Barré, Lord George Sackville, Wilkes, Horne Tooke, Lord Lyttleton, and several others, but the general opinion now is that Sir Philip Francis (q.v.) was the author. The handwriting of Junius seems to be the handwriting of Francis slightly disguised, though experts are not in full agreement on this point. Junius, as is evident from his letters, knew the forms of the Secretary of State's office, was intimately acquainted with the business of the War Office, attended the House of Commons in 1770, and took notes of speeches, especially of those of the Earl of Chatham; denounced the promotion of Anthony Chamier in the War Office as unjust to Mr. Francis, and was bound by some strong tie to the first Lord Holland. All these circumstances in the position of Junius correspond with the history of Francis. This and similar evidence, however, is wholly circumstantial. That Francis wrote the *Letters of Junius* has never been proved beyond a reasonable doubt. Consult the *Letters*, edited by J. Wade, in Bohn's Library (London, 1854); Chabot and Twisleton, *The Handwriting of Junius* (ib., 1870); G. H. R. Francis, *Junius Revealed* (ib., 1894). *The Francis Letters*, edited by Francis and Keary (ib., 1901).

JUNK (Malay *ajong*, *jong*, Chin. *chw'an*, *chw'en*, *tsu'an*, Cantonese *jonk*, ship). A Chinese vessel, often of several hundred tons. The old-type junks have but one large mast with or without one or more smaller ones. Many modern junks (and perhaps some old ones were also so fitted) have two masts of about equal size. The hull appears ungainly, the stern being high and the bow low, and the lines rather full above water, but the underwater body is often found to be very finely modeled, and the woodwork of the hull strongly and beautifully put together. The sails are made of coarse cloth or matting and bent to a yard, which is hoisted to the top of the mast; their height would render it difficult to make them set flat with ropes only, so that they are stiffened by small bamboo poles placed in a nearly horizontal direction. Most large junks are good sea boats, riding out severe typhoons in safety.

JUNKER, yun'kér, WILHELM (1840-92). A Russian explorer in Africa. He was born at Moscow, of German parents, and studied first at St. Petersburg, then at Göttingen, Berlin, and Prague. In 1869 he visited Iceland and first went to Africa in 1873. Having made short excursions to Tunis (1874) and Lower Egypt (1875), he went, in 1876, from Suakin to Khartum, sailed up the Blue Nile, and made extensive trips in a western direction, returning to Europe in 1878. Towards the end of 1879 he set out on a new expedition into the territories of the Niam Niam and Mangbattu to explore the basins of the Welle and the Bahr el-Ghazal. When he was about to return in December, 1883, after having obtained satisfactory results, his way down the Nile was cut off by the uprising of the Mahdi, and he was obliged to seek refuge with Emin Pasha at Lado. He did not succeed until 1886 in reaching Zanzibar, whence by way of Cairo he returned to Germany and there published the results of his travels under

the title *Reisen in Afrika, 1875-86* (3 vols., Vienna, 1889-91). In 1887 the Royal Geographical Society presented him with a gold medal.

JUNKIN, GEORGE (1790-1868). An American clergyman and educator. He was born near Carlisle, Pa., graduated at Jefferson College in 1813, and was pastor in the Associate Reformed church in central Pennsylvania, and after 1822 in the Presbyterian church. In 1832 he left the Germantown Manual Labor Academy, of which he had been head, founded Lafayette College, and served as first president of that institution from 1832 to 1841. After three years as president of Miami he returned to Lafayette, and in 1848 became president of Washington College (now Washington and Lee). Although an able defender of slavery, Junkin was strongly Union in his sentiments and resigned in 1861. He was a leader of the Old School Presbyterians. He is best known for his able administration of Lafayette College (q.v.), where he spent more than \$10,000 of his own fortune and his wife's to pay current expenses. One of his daughters married Gen. "Stonewall" Jackson. He wrote *Political Fallacies* (New York, 1863) and several religious works. Consult the biography by D. X. Junkin (Philadelphia, 1871).

JUNK'SEYLOON'. An island in the Bay of Bengal. See SALANG.

JUNO AND HERA. The Roman and Greek names of the queen of heaven and wife of the supreme divinity. Though alike in many respects, the two conceptions can best be treated separately.

Hera is, in all particulars, a thoroughly Hellenic conception, and the theory of Semitic origin may be dismissed in this, as in most other cases; there is, however, no general agreement as to the derivation of the name or the nature of the goddess. While some see in her an earth goddess, or even the special earth goddess of Argos, and in her union with Zeus a picture of the union of earth (or air, so Plato, who connected her name with *ἀήρ*, *air*) and heaven, others, especially Roscher, regard her as a moon goddess, and thus especially a goddess of women (whose lives were supposed to be specially influenced by the moon), and from this relation developing into the wife of Zeus and guardian of married life. This latter school derives the name from a root *sarv* or *harr*, to protect (cf. Lat. *servare*), so that the original form would be **EpFa*. Whatever the original nature of Hera may be, there can be no doubt concerning the position she occupies in the Greek religion. She is the consort of Zeus, for the major part of Greece at least. (See, however, **DIONE**, and **Zeus**, under **JUPITER**.) The union of Zeus and Hera, celebrated widely in the "Sacred Marriage" (*ἱερός γάμος*), is the prototype of human wedlock. This marriage is the centre of Hera's worship in all places. As the guardian of marriage, she also assumes guardianship over other phases of female life, and seems to have been regarded often as a goddess of childbirth (e.g., at the births of Hercules and Eurystheus), though this function was usually attributed to Eileithyia (q.v.). The cow was one of her sacred animals, and in later times the peacock was regarded as her favorite bird. The cult of Hera was universal throughout the Greek world, but was especially prominent at a few places, particu-

larly in the Achæan centres, Argos, Mycenæ, and Sparta, which, in *Iliad*, iv, 51 ff, she calls her favorite cities. Argos was one of the oldest and most famous centres of her worship. The sanctuary was situated to the east of the city on a spur of the ridge bounding the Argive plain and nearer Mycenæ than Argos. The old temple was burnt in 423 B.C. A new building was at once erected, which contained a gold and ivory statue by Polycleitus. (See *HERÆUM, THE ARGIVE*.) The priestesses of the temple were matrons and were held in high honor, as it was by the years of the priestess that the Argives dated events. The sanctuary was excavated by the American School of Classical Studies at Athens in 1892 and the following years. (Consult Waldstein, *The Argive Heraeum*, New York, 1902.) The rites of Hera at this place included an important festival which seems to have represented the sacred or mystic marriage, as did her festivals at other temples. Next to that of Argos was the famous temple on the island of Samos, of which one column is still standing. Here was a tradition of the birth of the goddess, under a sacred willow, and another annual marriage festival. She was ardently worshiped also on the Læcian promontory near Crotona in Magna Græcia. The best-defined cult of Hera as a marriage goddess was at Plataea and on the neighboring summit of Mount Cithæron, where a great festival was celebrated in honor of Zeus and Hera, as it was said that Zeus had carried the maiden Hera from Eubœa to a cave on this mountain. In literature Hera appears not only as the matron and noble queen of the gods, but also, in fact, more often as the jealous, proud, and somewhat shrewish wife, bitterly angered at her husband's numerous infidelities and frequently persecuting the children of her rivals (See, e.g., *ALCMENE; DANAE; BACCHUS, HERCULES, IO, LETO; SEMELE*). These stories of Olympian quarrels do not seem to have influenced the cult. The most famous statue of Hera was that by Polycleitus at Argos, described by Pausanias (q.v.); but no certain copies are known, and this is also true of the representations by other great artists. Indeed, statues or busts of Hera are comparatively rare in our museums. The goddess is represented standing, fully draped, with the sceptre, and in many cases with a veil. Of busts, the oldest is the rude limestone head from Olympia. The most celebrated are probably the Hera Farnese in Naples, once believed to be a copy of the work of Polycleitus, though now recognized as belonging to an earlier period and different school, and the beautiful Hera Ludovisi, in Rome, a work probably of the fourth century B.C., though the date is still much discussed. In reliefs, paintings, and especially on vases, the type of Hera naturally varies much, but in general preserves the character of the matron and queen.

Juno (regarded by many as a shortened form of *Iovino*: cf. *Iovis*, an old name of Jupiter; the words come from a root meaning 'to shine') was throughout Italy the consort of Jupiter and the queen of heaven. The whole worship of Juno shows the closest parallelism to that of her husband. To her the kalends (first) of each month were sacred, and in the earlier belief she also controlled the thunderbolt. This aspect of her cult is shown in her name, *Regina*, but it gradually passed into the background, and Juno became the goddess of

women, especially of wives and mothers; her great festival as *Lucina* (q.v.), who helped in childbirth, was the *Matronalia* on the first of March—the day on which at first, for centuries, the Roman year began—and other prominent celebrations in her honor were in the hands of women. To her women appealed for aid at every crisis. On the Capitol she was not only honored in the shrine of Jupiter, but also had her own temple as *Moneta*, where later the Roman mint was situated. She was worshiped also, especially at Lanuvium (q.v.), as *Juno Sospita*, Juno the Preserver, giver of health and safety, to individual and to state. In later times Greek influence much affected the Roman cult, and the cult of Juno approached more and more closely that of Hera. Consult, in addition to the standard mythologies—Overbeck, *Griechische Kunstmythologie*, vol. ii (Leipzig, 1873); Roscher, *Juno und Hera* (ib., 1875); Preller-Robert, *Griechische Mythologie* (Berlin, 1894); Farnell, *Cults of the Greek States*, vol. i (Oxford, 1896); Fowler, *Roman Festivals* (London, 1899); Gruppe, *Griechische Mythologie und Religionsgeschichte*, vol. i (Munich, 1906); Frazer, *The Golden Bough*, vol. i (London, 1911); C. E. Gayley, *The Classic Myths in English Literature and Art* (2d ed., Boston, 1911); Wissowa, *Religion und Kultus der Römer* (2d ed., Munich, 1912).

JUNOT, zhū'nó', ANDOCHE, DUKE OF ABRANTÈS (1771–1813). A marshal of France. He was born Oct. 23, 1771, at Bussy-le-Grand, in the Department of Côte-d'Or, entered the army as a volunteer during the early days of the Revolution, and distinguished himself in the first wars of the Republic. Napoleon's attention was first drawn to him during the siege of Toulon. Junot accompanied his patron to Italy as aide-de-camp, and at the battle of Millesimo (April 13–14, 1796) he distinguished himself so greatly that he was chosen to carry the captured colors back to Paris. He was later wounded in the head at Lomato, an injury from the effects of which he never completely recovered. In 1798 he followed Napoleon to Egypt, was there created a brigadier general, and particularly distinguished himself at Nazareth, where, at the head of 300 cavalry, he put to flight an army of several thousand Turks. Having been wounded in a duel, Junot was left in Egypt and on the journey back to France was captured by the English. He returned to Paris, however, in 1800, and was made a general of division and commandant of Paris. The latter post was not filled by Junot in a satisfactory manner. After he had served at Arras for a short time, he was sent, in 1804, as French Ambassador to Portugal. He left Lisbon without permission, in 1805, and joined Napoleon in Germany, distinguishing himself at the battle of Austerlitz. For a short time in 1806 Junot was again commandant of Paris, but again showed himself prodigal and extravagant, and finally, in 1807, he was appointed to the command of the army destined for the invasion of Portugal. His army, after undergoing dreadful privations, reached Lisbon December 1, and Junot made himself master of all the strong places in the Kingdom. For his brilliant conduct at this time he was created Duke of Abrantès and appointed Governor of Portugal, although he was entirely devoid of administrative talent; but, being defeated by Wellington at Vimero (Aug. 21, 1808), he

concluded a convention at Cintra for the evacuation of Portugal by the French, returned to France, and subsequently fought in the Peninsula and in Russia. In 1812 he had to bear more of the criticism for the failure of the campaign than he deserved and was stigmatized by Napoleon as deficient in energy and sent to govern Illyria. At this time, however, it became clear that his mind was deranged, and he was brought back to France and was taken to his father's house at Montbard, near Dijon; but two hours after his arrival he precipitated himself from a window and fractured his thigh bone. Amputation was performed; but Junot frantically tore off the bandages, and died a week later, July 29, 1813. Although not without brilliant gifts and charm of personality, he was too much of a *sabreur* to be a successful general and too irresponsible to be an administrator. Consult L. P. Junot, *Histoire des salons de Paris* (6 vols., Paris, 1837), id., *Souvenirs d'une ambassade et d'un séjour en Espagne et en Portugal, de 1808 à 1811* (2 vols., Brussels, 1838); Arthur Chuquet, "La folie de Junot," in *Institut de France, Académie des Sciences Morales et Politiques, Séances et Travaux*, vol. lxxii (new series, Paris, 1909).

JUNOT, LAURE, DUCHESS OF ABRANTÈS (Laurette de Saint-Martin-Permon) (1784-1838). A French writer, the wife of General Junot, to whom she was married in 1799. She was a social leader at the court of Napoleon I, her salon being frequented by the most prominent personages in political and social life in Paris. Her boundless extravagance brought about complete financial ruin. After the death of her husband, in 1813, she devoted herself to historical writing, and published *Mémoires, ou souvenirs historiques sur Napoléon, la révolution, le directoire, le consulat, l'empire, et la restauration* (18 vols., 1831-35), which, with all their diffuseness, bear witness to her keen observation and sound judgment. Despite the popular sensation produced by these and several other reminiscent works, she sank into misfortune and died in a charitable institution in Paris.

JUNTA, *Sp. pron.* hōōn'tá (*Sp.*, association) The name given in Spain and the Spanish-American countries to a body of persons combined for any political or civil object. The term was formerly applied more exclusively to assemblies of representatives of the people meeting without authority of the sovereign, but has been extended to those of the most strictly legal character. See AYUNTAMIENTO.

JUNTA. A family of printers. See GIUNTA.

JUNTO. The name used of a small coterie of eminent Whig politicians who, under the leadership of Russell, Somers, Montague, and Wharton, exerted great influence on British affairs during the time of William III.

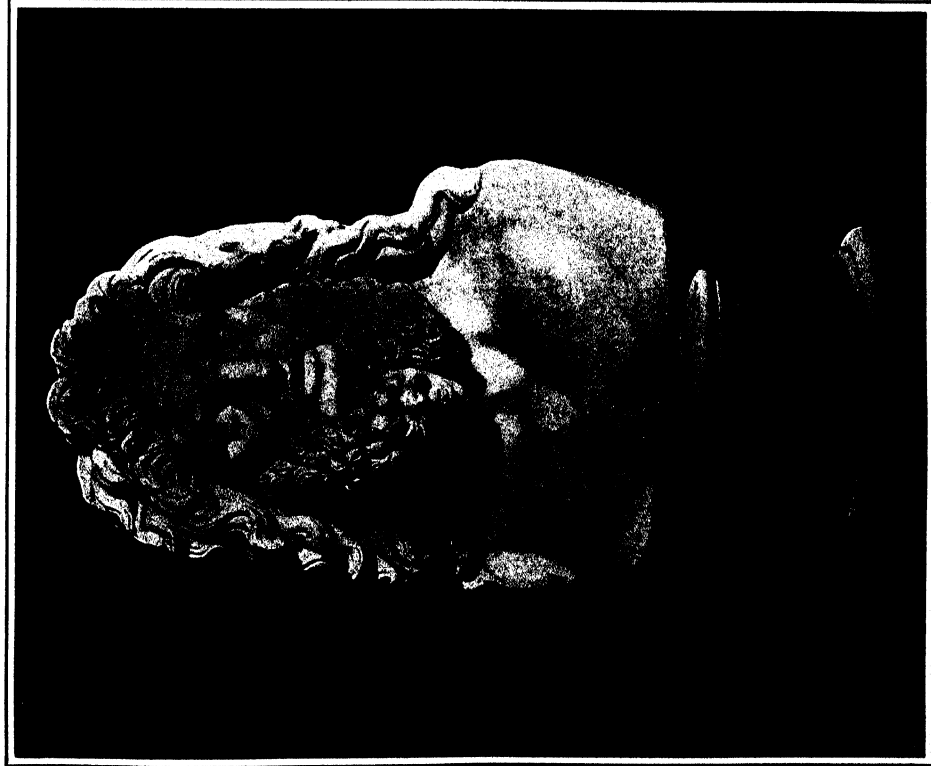
JUON, yōō'n, PAUL (1872-). A Russian composer, born in Moscow. In 1888 he entered the Moscow Conservatory, where his teachers were Hrimaly (violin) and Arensky and Taneiev (composition). After an additional course under Bargiel at the Hochschule in Berlin (1894), he won the much coveted Mendelssohn scholarship. In 1896 he accepted a position as teacher of composition at the conservatory in Baku, on the Caspian Sea, but returned the following year to Berlin, where he settled permanently. In 1906 he became professor of composition at the Hochschule. As a composer, he follows the

ideals of Brahms in his devotion to absolute as opposed to programme music (q.v.). Like the great German master, he cultivates the classical forms and derives much of his inspiration from the folk music of his native land. What saves him from being a mere imitator of Brahms is his originality, strong inventive power, and the decidedly Slavic character of his music. His compositions include a symphony in A, serenade, phantasy, suite, and several smaller pieces for orchestra; a violin concerto; piano pieces, songs. His chamber music, in which field he probably surpasses all his contemporaries, is remarkable not only for its intrinsic beauty, but also for the variety of instruments employed. He is author of an excellent *Praktische Harmonielehre* (1901) and the translator into German of Modeste Tchaikowsky's biography of Peter Tchaikowsky.

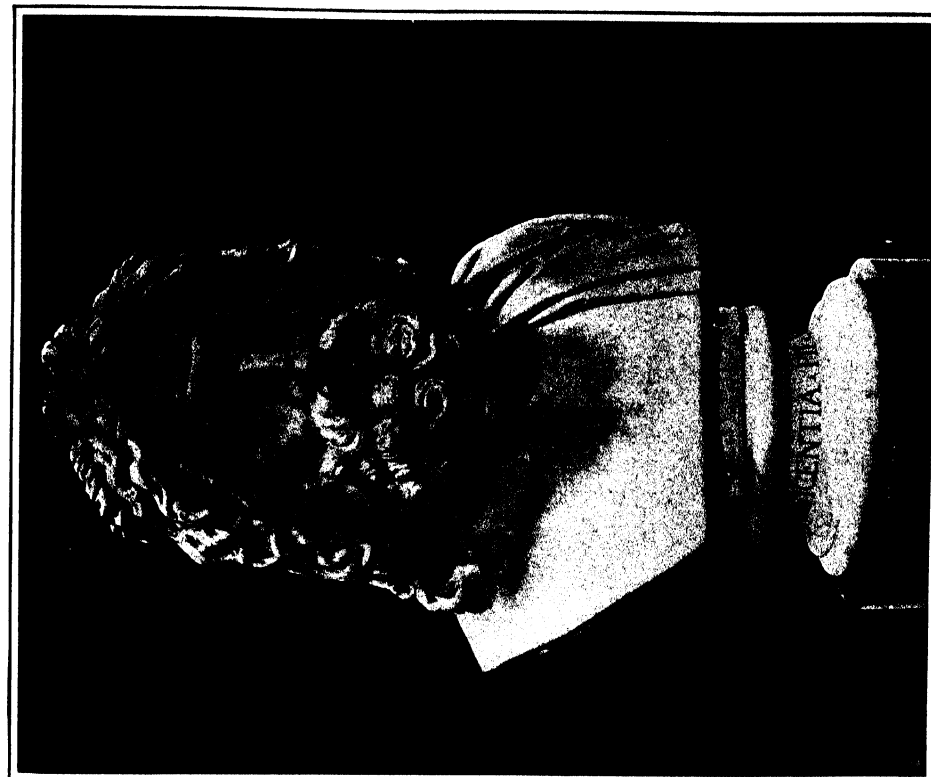
JUPATI (jōō'pá-tē') **PALM** (South American Indian), *Raphia vinifera*. A palm which grows on rich, alluvial, tide-flooded lands near the mouth of the Amazon. The stem is seldom more than 6 or 8 feet high; but the leaves, which are pinnate, with leaflets about 4 feet long, are often 50 to 60 feet long, rise vertically from the summit of the stem, bend out on every side in graceful curves, forming a magnificent plume, and are perhaps the largest in the vegetable kingdom. The leafstalks, which are often 12 or 15 feet long below the first leaflets, and 4 or 5 inches in diameter, are perfectly straight and cylindrical. When dried, the thin, hard, glossy outer covering is used for laths and window blinds. The interior part is soft enough to be used instead of cork. One of its forms is the *wine palm* of the west coast of Africa and eastern South America. This is a tree of moderate height with leaves 6 to 8 feet in length. From the trunk of this tree an intoxicating beverage is derived. According to report it forms a very considerable portion of the vegetation in the region in which it grows. Its leaves are made into hats, cloth, and cordage, its leafstalks are used in building houses, fences, etc., and from the crown of young leaves palm wine is obtained. From this species and from *Raphia ruffia* or *Raphia pedunculata* is obtained an important very strong fibre called raffia, which is largely used in nurseries and greenhouses for tying up plants. The fibre has been successfully woven into artistic mattings for decorative uses, as well as cloth, which is the almost universal clothing of the natives. See Plate of PALMS.

JUPITER (*Lat.* Jupiter, *Juppiter*, *OLat.* Joupiter, *Gk.* Ζεύς Πατήρ, *Zeus Patēr*, *Skt.* Dyāus Pitar, *Father Jove*; cf. *Lat.* Diovis Pater, *Diespiter*. The name *Jupiter* is derived from *Lat.* Jovis, *OLat.* Jovos, *Gk.* Ζεύς, *Zeus*, *Skt.* dyāus, *sky* (connected with *AS.* Tūv, *Oldcl.* Týr, *OHG.* Zio, and with *Eng.* *Tues-day*, and ultimately with *Lat.* deus, *OLr.* díā, *Lith.* dévas, *Skt.* dēva, *god*), and *Lat.* pater, *Gk.* πατήρ, *patēr*, *Skt.* pitar, *OHG.* fater, *Ger.* Vater, *Goth.* fadar, *AS.* fæder, *Eng.* father). The chief god of Latin mythology, identified by the Romans with the Greek Zeus. The names are etymologically the same, and the equivalents are found also among the other Indo-European nations, though among none but the Greeks and Romans did they designate the chief divinity. The word *dyāus* means 'sky' (√di- or diu-, shine), and there can be little doubt that the divinity thus named is the god of the light and the heavens, whence

JUPITER



1. JUPITER FROM POMPEII, In the National Museum. Naples.



2. ZEUS OF OTRICOLI, In the Vatican Museum, Rome.

come the fructifying showers and also the destructive storms and deadly lightning. The fact that the etymology of the name was early and wholly lost to the consciousness of both Greeks and Romans aided in the complete personification of Zeus or Jupiter, and it is only in the later philosophic and speculative poetry that we find the identification of the supreme god with the *æther* or pure upper air, and even then the context is apt to point to pantheism.

Greek. As usual, the Romans borrowed much from the Greeks in their later conception of Jupiter, and it will be best to treat first of Zeus as he appears in Greek mythology. From the beginning of our records Zeus appears as the supreme god, established as the ruler of the universe, whom all the other gods obey, for he is stronger than all of them. He wields the thunderbolt, which in even the earliest art is his almost inseparable attribute. Of the origin of this supremacy nothing is known. It may come from the natural idea of the god of the sky and light, or it may be due to the awe before the power of the thunderbolt, which would secure to its wielder irresistible might. With Zeus were also associated the eagle, the oak (at Dodona), and the wolf (on Mount Lycæus: see below. According to another view, however, *Λυκαῖος*, the epithet of Zeus in this worship, comes rather from a root meaning 'light'; in this view Jupiter is again a god of light, and the wolf is by accident connected with his worship). To Zeus in Homer also belongs the *αἰγίς* (q.v.), brandishing which he causes confusion and terror to fall upon his enemies. Closely connected with the idea of Zeus as god of the lightning and thunder is his function as a rain god. As the supreme god, Zeus was the protector of suppliants and the punisher of perjurers. Though Zeus nowhere actively takes part in battle except against such enemies of the gods as the Titans, Typhon, or the Giants, he was honored by the erection after a victory of a trophy which was dedicated to him. He was also a prophetic god, perhaps from the use of lightning in auguries, revealing the future in many ways, as by birds and dreams, or at his oracles. Naturally in the developed Hellenic civilization other functions are especially assigned to Zeus, and he often appears as the guardian of leagues or of public assemblies. Zeus was of course worshiped throughout Greece, and with a wide variety of local observances, but there are a few places where his cult received especial prominence and obtained far more than a local importance. *Dodona* (q.v.) was the seat of a very early worship, called by the Greeks Pelasgian, where Zeus was associated with Dione instead of Hera, and gave oracular responses to those who asked advice, either by the rustling leaves of the oaks, or by casting lots, or by other more complicated methods. The great centre of Zeus worship in Greece was, of course, *Olympia* (q.v.), where from very early times there seems to have been a cult of Hera and possibly of Zeus also, though it is very probable that the latter was introduced from Thessaly, where the home of Zeus was placed on the summit of Mount Olympus. Here also was an oracle, which, however, never attained special eminence. The important feature of this cult was the celebration, every four years, of the great Olympian games. (See OLYMPIC GAMES.) Primitive rites and even human sacrifices appear in connection with the worship of Zeus on Mount Lycæus in Arcadia, where there

was no temple or image, but only two eagles on pillars facing the east in an inclosure on the summit of the mountain which it was forbidden to enter. Here a boy was sacrificed by a priest, who, after tasting of the victim, fled and was believed to be transformed for nine years into a wolf. The rite seems to have been performed even as late as the time of Hadrian. Similar rites existed on Mount Ithome in Messenia, and at Halys in Phthiotis and Orchomenus in Bœotia in connection with the cult of Zeus Laphystius. There are even traces of such savage customs in the Zeus cults of Athens, where the god seems to have been worshiped both as a beneficent and as a cruel deity. (For another Athenian ceremony in honor of Zeus, see DIPOLIA.) His great temple, begun by Pisistratus in honor of the Olympian Zeus, was to the southeast of the Acropolis, near the Ilissus. Passing from Greece proper, we find in Crete a very extensive worship of Zeus which shows many traits pointing to early connection with Asia Minor, especially Caria, and the worship of Rhea-Cybele or Cybele, the great mother of the gods. Here the god was born of Rhea, and here concealed from his jealous father, Cronus, in a cave (either the Dictæan or Idean), where he was suckled by the goat Amalthea, while the armed Curetes (the regular attendants of Rhea) danced and clashed their shields to drown his infant cries. (See CURETES; CORYBANTES.) Here, too, not far from Cnossus, was shown the grave of Zeus. Much here recalls the worship of Dionysus and obviously contains a chthonic element. In general, the god was honored on lofty mountains, as is to be expected from his nature as a god of the sky and also of lightning for it is around the mountain tops that the storm clouds gather. The stories of the birth of Zeus, which have been already mentioned, appear even in Hesiod, who also tells of the overthrow of Cronus and the establishment of the new dynasty by Zeus, who, after hard struggles with the Titans and the Giants, secures his supremacy. In general, the myths about Zeus are concerned chiefly with his numerous love affairs, either with goddesses or with mortals. (See ALCMENE; DANAË; ELECTRA, I.; LETO; SEMELE.) In some of these we doubtless have reminiscences of the association in worship of different goddesses with the supreme god, before the unification of religious views had established Hera as his legitimate consort. A large number, however, are due to the desire to trace the descent of the heroes and noble families to the great god. *Διογενής* (Zeus-descended) is a common Homeric epithet of the Achæan princes. In art Zeus was usually represented as bearded and of majestic presence. The artistic type was largely determined by the great gold and ivory statue by Phidias in the temple at Olympia, of which we can form but a slight notion from the late coins of Elis and the description of Pausanias. A fine example of the later type is the well-known Zeus Ottricoli in the Vatican. Consult: Overbeck, *Griechische Kunstmythologie und Atlas* (Leipzig, 1871 et seq.); Preller-Robert, *Griechische Mythologie* (Berlin, 1887); and other works cited under GREEK RELIGION.

Roman. Jupiter, under various forms of the name, was worshiped throughout all Italy, and his position as god of the heavens is made even plainer by the epithet *Lucetius* (bringer of light), in the hymn of the Salii, and by the standing phrase *sub Jove* (under the open sky). This aspect of the god is obvious in the earlier

forms of his worship at Rome. He was worshipped as god of the lightning under the titles Jupiter Elicius and Jupiter Fulgur. The Ides, or day of the full moon, were sacred to Jupiter, and in his honor was celebrated the festival connected with the vintage, apparently because the wine was especially dependent on the god of heaven for its increase. His chief sanctuary in Rome was on the summit of the Capitol, where the god was worshipped with Juno and Minerva, as Jupiter Optimus Maximus, and near by was an earlier chapel, said to have been dedicated by Romulus to Jupiter Feretrius, or god to whom spoils of war were brought, which contained only a piece of flint as a sacred symbol, probably of the thunderbolt, whence the god was also called Jupiter Lapis. The same development of the all-seeing and all-powerful god of the heavens to be the protector and guardian of human rights and suppliants which occurred in Greece can also be traced to Rome, where Jupiter was worshipped as the protector of oaths, and the protector of the Fetiales, wherefore the Fetiales are especially connected with his cult. Here also we find Jupiter a god of battles, whose thunderbolts might be drawn down upon the enemy, and to whom the general who had slain the hostile leader dedicated the *spolia opima*. Jupiter also revealed the future by signs, and on one of the summits of his sacred hill, the Capitol, the augurs had their station. That Jupiter was widely worshipped in the country as giver of fair weather and sender of the rain and storm is natural, but in the Roman state his chief importance lies in the political cult at the Capitol, which came to be the religious centre of Roman rule. Closely connected with this was the worship of Jupiter Latiaris on the Alban Mountain, where was a very ancient sanctuary, apparently once the religious centre of the Latin League.

Bibliography. Preller-Jordan, *Römische Mythologie* (Berlin, 1881); article "Jupiter" in Roscher, *Lexicon der griechischen und römischen Mythologie*, vol. ii (Leipzig, 1890-97); Preller-Robert, *Griechische Mythologie* (Berlin, 1894); Farnell, *Cults of the Greek States*, vol. i (Oxford, 1896); Fowler, *Roman Festivals* (London, 1899); Cook, "Zeus, Jupiter, and the Oak," in the *Classical Review*, vols. xvii, xviii (ib., 1903-04); Gruppe, *Griechische Mythologie*, vol. ii (Munich, 1906); Frazer, *Golden Bough*, vol. i

JUPITER. The largest planet in the solar system, having a mass nearly three times as great as the combined masses of all the other planets. Its orbit is about five and two-tenths times as far from the sun as that of the earth, or at a mean distance of 483,300,000 miles, and its eccentricity is 0.048, the planet's greatest and least distances from the solar centre varying between 462,000,000 and 504,000,000 miles. The planet's mean distance from the earth when in opposition is about 390,000,000 miles, and it moves around the sun in 11 years and 314.92 days, so that the interval between its returns to opposition has a mean value of 399 days, and its orbit is inclined to the ecliptic about $1^{\circ} 18' 29''$. The mean diameter is about 86,500 miles, with a polar compression of about one-seventeenth, thus exceeding the earth in volume a little over 1279 times. One of the distinguishing features of the planet is the belt or stratified changeable band crossing the disk in a direction parallel to the plane of the orbit. The belt varies greatly, being at times narrow, while sometimes almost the whole disk is covered. Months will sometimes pass without any remarkable change in the telescopic appearance of Jupiter's surface, and then suddenly considerable alterations will take place in a few hours. In addition to these changeable bands, more permanent spots sometimes appear. The "Great Red Spot," first seen in 1878, is the most important of these. It is still visible. But the rotation period of the planet cannot be fixed very accurately from observations of the spots, because none of them retains its position with sufficient permanence. The rotation is known, however, to take place in about 9 hours 55 minutes. There can be no doubt but that atmospheric currents on Jupiter materially affect his appearance in our telescopes.

The inclination of Jupiter's equator to the plane of his orbit is $3^{\circ} 5'$, which would fix the changes of the seasons within narrow limits, were the planet existing under circumstances resembling those of the earth, but as the temperature of Jupiter is above redness (how far above is not known), the sun's rays, at his immense distance, can hardly be taken as an element of the surface heat.

Jupiter has eight satellites or moons, as follows.

NO	Name	Discoverer	Date of discovery	Distance in radii of planet	Period	Mass, that of Jupiter being 1	Diameter in miles
					dys hrs min		
5	Io	Barnard	1892	2 55	0 11 57	0.00001688	100 (?)
1		Galileo	1610	5 93	1 18 28		2,500
2		"	"	9 44	3 13 14		2,100
3		"	"	15 06	7 3 43		3,550
4	Ganymede	"	"	26 49	16 16 32	0.0000844	2,960
6	Callisto	Perrine	1904	160 46	250 15 0	0.00004248	100 (?)
7		"	1905	164 46	260 1 0		35 (?)
8		Melotte	1908	329 30	739 0 0		

(2d ed., London, 1911); C. E. Gayley, *Classic Myths in English Literature and Art* (2d ed., Boston, 1911); A. W. Cook, *Zeus, God of the Bright Sky* (London, 1914); and the article "Jupiter," in Lübker, *Reallexikon des klassischen Altertums* (8th ed., Leipzig, 1914). For Jupiter as a rain god, Jupiter Pluvius, consult Morgan, "Rain-Gods and Rain-Charms," in *Transactions of American Philological Association*, vol. xxxii (Hartford, 1901). See JUPITER CAPITOLINUS; JUPITER STATOR.

On account of the slight inclination of Jupiter's equator to the ecliptic, and the fact that the planes of the orbits of the first five satellites vary little from the plane of the equator, all of them except Callisto suffer an eclipse at every revolution. The eclipses of the four Galilean satellites are of interest in connection with the velocity of light which was first estimated by means of observation of them by the Danish astronomer Roemer (q.v.) in 1675. Another most interesting phenomenon of the satellites is

that of their "shadow transits." When a satellite passes between Jupiter and the sun, a shadow falls upon the planet. This shadow is analogous to that cast on the earth by our moon in total solar eclipses. (See ECLIPSE.) To an observer at the telescope these satellite shadows appear as tiny dark dots moving across Jupiter's disk. The satellites themselves can also be observed (though with difficulty) projected against the disk of the planet and transiting across. The satellites are also at times hidden or occulted behind the disk. See ASTRONOMY, PLANETS; SOLAR SYSTEM.

JUPITER CAPITOLINUS (Lat., Jupiter of the Capitol), TEMPLE OF. The national shrine of ancient Rome, on the Capitol, dedicated to Jupiter Optimus Maximus, Juno, and Minerva, built, according to the common account, by Tarquinius Superbus and consecrated in 509 B.C. It stood on Monte Caprino, the more southerly of the two summits forming the Capitoline Hill, on a raised platform on the middle of a sacred site, and could be approached only from one side, the other sides being formed by cliffs. The surface of the hill was leveled in the fourth century B.C. by great walls rising from the plain and covered with inscriptions in honor of the god. The temple was a low Etruscan structure, with a periphery of 800 feet, and with a triple row of columns in front, and a cella with three divisions, sacred to Jupiter, Juno, and Minerva. Above the pediment was a terra-cotta quadriga. The building was burned in 83 B.C., and was reconstructed by Sulla and Julius Caesar. It was again restored under Augustus in 9 B.C., under Vespasian in 74 A.D., and under Domitian in 82 A.D. It was plundered in 455 by the Vandals, robbed of its statues and gilded bronze tiles, and gradually became a quarry for other structures. Fragments were discovered in the sixteenth century, and in the eighteenth and nineteenth centuries other architectural remains which had rolled down the hill were recovered. Consult R. Lanciani, *Pagan and Christian Rome* (Boston, 1893), and S. B. Platner, *The Topography and Monuments of Ancient Rome* (2d ed., ib., 1911).

JUPITER LATIA'RIS. See JUPITER; LATIUM.

JUPITER OF OTRICOLI. See ZEUS OF OTRICOLI.

JUPITER SERA'PIS, TEMPLE OF (so called). This building, situated at Pozzuoli, near Naples, is really not a temple at all, but the public market of Pozzuoli, a circular structure built around a court. Only three of the original 46 pillars exist. They rise out of the water, the pavement of the temple being at present submerged, but they bear evidence of having been at one time submerged to half their height, which is 42 feet. The shafts of the pillars as high as 12 feet are quite smooth; for the next nine feet they are pitted by the boring action of mollusks, still active in the neighboring rocks. The water must have covered this portion of the pillars, and, while the mollusks were busy, the lower 12 feet must have been protected from their ravages by being buried in mud. The alternate raising and lowering of the ground level is evidently due to volcanic action, but the changes of level have been so gradual that the pillars have not been moved from their original position.

JUPITER STATOR (Lat., Jupiter the

Stayer [of flight]), TEMPLE OF. A temple at Rome vowed by Romulus to Jupiter should Jupiter stay the flight of the Romans from the Sabines (Livy, i, 12). In payment of this vow a Corinthian temple was built (296 B.C.) by M. Atilius Regulus. The best evidence places it near the Sacred Way, east of the Arch of Titus. Its site is occupied by ruins of a tower of the Frangipani. Consult R. Lanciani, *The Ruins and Excavations of Ancient Rome* (Boston, 1897).

JU'RA, Fr. pron. zhu'ra'. A range of mountains on the west frontier of Switzerland. Beginning in southeast France on the north bank of the Rhone at Saint-Genix, it extends northward, forming the west bank of the river till it reaches the Swiss frontier near Geneva. From that point it follows the boundary line in a long curve towards the northeast, finally passing wholly into Switzerland, and terminating on the south bank of the Rhine west of its confluence with the Aar (Map: Switzerland, A 2). The range thus defined is the Jura proper, but many geographers continue the name north of the Rhine and south of the Rhone, regarding these rivers as simply making two breaks in an otherwise continuous chain. South of the Rhone the chain is known as the Jura Alps and merges with the Alps of Dauphiné and other branches of the western Alps. North of the Rhine an irregular chain extends east of the Schwarzwald through Württemberg and Bavaria as far as the Main River. This chain, called the German, or Swabian and Franconian, Jura, is similar to the Jura proper in the character of its rock formations, but different in its structure, being formed entirely by faulting.

The Jura Mountains proper consist of a series of parallel folds in the strata, forming together a plateau nearly 200 miles long and 20 to 35 miles wide. These folded ridges have in many places suffered transverse fractures, which in the form of steep gorges, known as cluses, add greatly to the picturesque character of the landscape. The general height of the range is 3000 to 5000 feet. It is highest near the south end, west of Lake Geneva, where the Crête de la Neige has an altitude of 5653 feet. Other prominent summits are the Reculet, 5643 feet; the Dôle, 5507 feet, and Mont Tendre, 5512 feet. The east slope falls abruptly towards the lacustrine basin forming the plain of Switzerland and occupied by the lakes of Geneva, Neuchâtel, Bienné, and Morat, westward and northward the slope is more gradual towards the Saône valley.

The Jura Mountains consist entirely of sedimentary strata composed of fossiliferous sandstone and limestone of Mesozoic age. This group of rocks has given the name Jurassic system to one of the main divisions of the geological scale, and in physiography it is recognized as a type of simple folding. Glacial boulders are scattered over the slopes of the Jura in countless numbers.

The climate of the Jura is relatively severe, and large masses of snow remain on the summits during a great part of the year. The slopes are largely covered with pine forests, and agriculture is chiefly confined to the valley bottoms. The principal mineral products of the mountains are lithographic stones, gypsum, and salt.

JURA. An eastern frontier department of France, bounded on the south by the Department of Ain and on the east by Switzerland (Map: France, N., L 6). Area, 1952 square miles.

Pop., 1911, 252,713. Of its surface, two-thirds is covered by the Jura Mountains, which reach their greatest altitude in the department in Noirmont, 5085 feet, the remainder is a low plain about 7 miles wide skirting the west border. The chief timber is in the Forest of Chaux. The chief rivers are the Ain, the Doubs, the Loue, the Valouze, and the Bienne. The soil on the mountains is thin and stony, but yields abundant grass; on the plain it is rich and produces wheat, oats, maize, barley, rape, and potatoes. The wines of Arbois, of Poligny, of Etoile, and of Salins have some reputation. The working of rock salt is one of the chief branches of industry; coal and iron are mined; and marble, alabaster, and lithographic stone are quarried. Gruyère and Septmoncel cheeses are extensively made, and there is a good trade in timber from the forests of Chaux, Serre, and Moisdons. Capital, Lons-le-Saunier.

JURA MOUNTAINS. See JURA.

JURARA, zhōō-rā'rá, or **ARRAU**, ār'rou. An Indian name of the great turtle of the Amazon (*Podocnemis expansa*), the gathering of whose flesh and eggs is important to the natives of the entire Amazon basin. See **TURTLE**.

JURASSIC SYSTEM. A division of the geologic column following the Triassic and immediately preceding the Cretaceous. The name is taken from the Jura Mountains of Switzerland, where there is a great development of the rocks of this system. A fullness of detail is observable in other parts of Europe, but in America the Jurassic strata are of small extent, and in places it is impossible to separate them from the Triassic, for which reason the term Juratrias is employed on the maps of the United States Geological Survey. The main subdivisions of the Jurassic system as developed in Europe are as follows. (a) Lias, or Lower Jura, (b) Lower Oolite, or Middle Jura, (c) Middle Oolite, and (d) Upper Oolite, or Upper Jura. Strata of undoubted Jurassic age are not known along the Atlantic coast of the United States, although some geologists have considered that the upper beds of the Trias are referable to this system, while other authorities would class the Potomac beds as Jurassic. A great area of probable Jurassic sandstone, but lacking fossils, was deposited in an interior sea in Colorado, Wyoming, Arizona, and New Mexico. In California and Oregon there are Liassic beds, while marine Upper Jurassic strata occur in northern Utah, Wyoming, and Montana. Upper Jurassic slates of great thickness and interbedded with volcanic tuffs are found in the Sierra Nevada of California and in British Columbia. In Europe there is an abundance of Jurassic rocks, which were deposited in depressions of post-Triassic time. Those of the Lias or Lower Jura cover large areas of southern and central Europe and also extend in a band across Great Britain. They are generally lacking, however, in northern Russia. In the Lower Oolite much additional land was submerged, and the deposits cover central and northern Russia, Siberia, and the Indian peninsula.

The Jurassic rocks abound in fossils in some areas, notably Europe, where in England alone over 4000 species have been found. The plant life of the Jurassic is similar to that of the Triassic. Among the more important forms were ferns, equisetæ, cycads, and conifers. It was in this era that the cycads attained their maximum development, and tree ferns grew in

great profusion. Foraminifera are found in countless numbers in some of the limestones, as were also the siliceous cases of radiolarians and sponges. Corals were numerous, and sea urchins and crinoids swarmed. There were many delicate forms of life such as crustaceans, limuloids, and insects of several orders which required special conditions for their perfect preservation. These are found in abundance in the homogeneous fine-grained lithographic limestones of Solenhofen, Bavaria. Brachiopods still existed in the Jurassic, and lamellibranchs of the oyster type were very common. The cephalopods were another class which culminated in this era, and included both nautiloids and ammonoids among the coiled forms and belemnites in the straight shells. Among the fishes there was an advance over those of Triassic times. In the class of teleostomes the ganoids continued to predominate, and many were covered with thick, shining scales. Amphibia are known to have existed, but the reptiles were a prominent feature of the Jurassic fauna and so abounded that the period is sometimes called the "age of reptiles." Among them were turtles, lizards (the first true ones known), and ichthyosaurians, or marine reptiles, the European representative being *Ichthyosaurus* (q.v.) and the American one *Baptanodon* (q.v.). Another marine group was represented by *Plesiosaurus*, which differed from *Ichthyosaurus* in having a much longer body and neck and larger paddles. The dinosaurians assumed prodigious proportions, but were of variable shape and size. They included such genera as *Megalosaurus*, *Cetiosaurus*, *Ceratosaurus*, *Stegosaurus*, and *Diplodocus*. The form *Atlantosaurus* reached a length of 100 feet. The Pterosauria were flying reptiles, having a spread of about 3 feet. They are found in the slates, together with a more curious fossil, the archæopteryx (q.v.). The latter represents the earliest bird known.

The Jurassic was a time of great geographical change in North America. During this era the Appalachians were subjected to extensive erosion. A gulf spread northward from the southern United States over the great basin region, and a similar sea existed in Canada east of the Cordilleras. At the close of the Jurassic there was a period of mountain making along what is now the Pacific coast. The Sierra Nevada was uplifted and probably also the coast ranges.

The economic products of the Jurassic are few in the United States. The most important are the gold-bearing veins found in the Jurassic slates of California and known collectively as the mother lode. Beds of fire clay and potter's clay are also found. Practically the entire supply of limestone used for lithographic work is obtained from Jurassic deposits near Solenhofen in Bavaria. This is a limestone of remarkably fine grain and extremely even texture, whose equal has thus far been found at but very few localities. Consult: White, "On the Fresh-Water Invertebrates of the North American Jurassic," in *United States Geological Survey, Bulletin No. 29* (Washington, 1886); Geikie, *Text-Book of Geology* (London, 1903); Chamberlin and Salisbury, *Geology*, vol. iii (New York, 1907). See **GEOLOGY**; **LIASSIC SERIES**; **OOLITE**.

JUREL, hōō-rél', or **KUREL**, hōō-rél'. One of several species of horse mackerels (q.v.) of the family Carangidae, common in the warmer

seas and particularly about the West Indies. Southward the name belongs principally to *Caranx latus* (see Plate of HORSE MACKEREL), called in Florida horse-eyed jack, but northerly it is applied more frequently to the yellow mackerel (*Caranx chrysos*), or hardtail. All are excellent food fishes and of handsome appearance. On the Pacific coast this name, as well as horse mackerel, is applied to the related saurels (see SAUREL) of the genus *Trachurus*.

JÜRGENSBURG, BARON CLODT. See CLODT-JÜRGENSBURG, PETER KARLOVITCH, BARON.

JURI, zhōō-ré' 1. A tribe of Arawakan stock (q.v.) between the lower Putumayo (Iça) and Japurá rivers, northern affluents of the Solimões or Amazon, in northwestern Brazil. Some of them are also settled on the Negro. They were formerly the most powerful tribe of the region, but are now nearly extinct. Their tribal mark is a tattooed circle around the mouth. Women tattoo on both cheeks. They are expert in the use of the blowgun and canoe, and build circular huts of poles with dome-shaped roofs of palm leaves. In language and general customs they closely resemble their neighbors the Passé (q.v.) 2 An unimportant subtribe of the Lule (q.v.), on the Río Salado, in northern Argentina.

JURIEN DE LA GRAVIÈRE, zhū'rě-ān' de là grā'vyār', JEAN PIERRE EDMOND (1812-92) A French admiral and historian, born at Brest. He was the son of Pierre Roch Jurien de la Gravière (1772-1849, created vice admiral in 1831). Captain of a corvette in 1841, he became captain of a ship in 1850 and during the Crimean War was created rear admiral (1855). Charged with the expedition to Mexico (1861), he arranged with Great Britain and Spain the Treaty of Soledad (1862), and although Napoleon III refused to keep the terms of the treaty, he did not blame his vice admiral, who was made aid-de-camp and given command of the Mediterranean fleet (1868-70). It was he who managed the flight of the Empress in 1870. In 1871 he was made director of charts in the Naval Office and in 1888 was elected to the Academy. His works, which treat of naval subjects, include *Voyage en Chine pendant les années 1847-50* (1854, often reprinted), *Guerres maritimes sous la République et sous l'Empire* (1847), *Les campagnes d'Alexandre* (1883-84), *Les gloires maritimes de la France* (1888), *L'Amiral Roussin* (1889), *Les Anglais et les Hollandais dans les mers polaires et dans les mers des Indes* (1890), *Le siège de La Rochelle* (1891), *La flotille de l'Euphrate* (1892), *Les gueux de mer* (3d ed., 1892). In 1866 he became a member of the Academy of Sciences, and in 1876 he received the grand cross of the Legion of Honor.

JURIEU, zhū'rě-ē', PIERRE (1637-1713). A French Protestant theologian, the son of a minister at Mer, whom he succeeded as pastor, after having visited Holland and England. In 1674 he became professor of theology and Hebrew at the Academy of Sedan, which institution was broken up by the Jesuits in 1681. Exposed to persecution for his writing, he fled to Holland and was pastor of the Walloon church at Rotterdam until his death. He is chiefly remembered as a bitter and rancorous controversialist. His zeal and the self-assertion which marked the expression of his views led him into wordy battles with the theologians so prominent as Bayle, Basnage de Beauval, Bossuet, and Grotius, some

of whom were Protestants. His voluminous writings are now esteemed as little more than curiosities of the period in which he lived, with the exception of a few that are of lasting value. Among these are *Histoire du Calvinisme et celle du Papisme* (1682) and *Histoire critique des dogmes et des cultes* (1704).

JURISCONSULT (Lat. *juris*, gen. sing. of *jus*, right, law, and *consulere*, to consult). The term *juris consultus*, and also the terms *jurisperitus* and *jurisprudens*, were employed by the Romans to describe a man learned in the law, a jurist. In the Republican period the Roman jurists were men of good family, and usually of independent fortune, who gave legal advice gratuitously, as a method of recommending themselves to the people and obtaining elective office. In the case of the more eminent of these their decisions or responses came to be regarded as authoritative on questions of law and were regularly followed by the judges. In the Imperial period a right of responding (*jus respondendi*) was granted by the emperors to some of the most eminent jurists, and the judges were directed to follow the responses of such patented jurists unless conflicting decisions were submitted. As the right of responding was usually accorded to all the members of the Imperial auditory (the highest court of appeal), the practical effect of the innovation was to force the lower courts to follow the decisions of the auditory. The writings of the Imperial jurists were substantially digests of the case law of the late Republic and early Empire, and from these writings the Digest of Justinian was compiled. (See Muirhead, *Historical Introduction to the Private Law of Rome*.) In modern times the word "jurisconsult" is used on the Continent (but rarely in England or in the United States) as equivalent to jurist. See CIVIL LAW; JURISPRUDENCE, LAWYER.

JURISDICTION (Lat. *jurisdictio*, *juris dictio*, administration of law, from *juris*, gen. sing. of *jus*, right, law, and *dictio*, statement, from *dicere*, to say). The authority of a court or judicial officer to hear and determine a cause of action, or to take cognizance of, and to exercise judicial power in relation to, other matters requiring such supervision and attention.

The jurisdiction of a court—the persons over whom it may exercise its powers, the district or territory in which its process runs, the class of cases which it is competent to entertain, and the remedies which it may administer—is determined by the law of the land, and this, like the law administered by the court, may be common or customary law or may depend on statute. The principal English courts are or, until the passage of the Judicature Acts (1873-1877) were of three kinds: the common law courts, the equity courts, and the admiralty courts, their jurisdiction having grown up imperceptibly in the long period during which they exercised their functions. The courts of America, on the other hand, are almost invariably of statutory origin, and their jurisdiction is determined by the constitutional or statutory provisions creating them and defining their powers. The jurisdiction of a statutory court is necessarily confined to the limitations prescribed by such laws or reasonably to be implied therefrom. For example, if a court is created for the express purpose of hearing criminal cases, it cannot assume jurisdiction over civil causes, as they are by implication excluded. There is some controversy as to whether a court has inherent

powers. This arises largely from a confusion of terms rather than a difference of opinion as to the source of authority of judicial tribunals. A court is often vested with general jurisdiction over a certain class of cases, and it is universally conceded that it has such powers as are incidental and requisite to the execution of the relief it is authorized to administer. For example, if a court is created to act as a "court of equity," and nothing further is prescribed as to the limits of its jurisdiction, it can do any act which a court having equitable jurisdiction can do under the practice then commonly accepted. Its powers in such a case are not enumerated, but they are incidental to the general authority given. Therefore judicial tribunals have no inherent powers outside of the jurisdiction expressly vested in them, but have what may be described as powers incidental to the execution of their prescribed judicial functions.

To render the jurisdiction of a court complete in a given case, it must have control or authority over the general subject matter of the cause of action and of the person or property involved. The phrase "subject matter" includes the general subject, or legal classification of rights and remedies, under which the parties claim. Jurisdiction may be in personam or in rem, i.e., over the person or over the thing involved.

The territorial jurisdiction of a court can in no case extend beyond the limits of the state or nation creating it. In general it may be said that a court has jurisdiction of any person who comes within its prescribed territorial limits so that its process may be served upon him, even though he be a nonresident or an alien. Some states provide that their courts may take jurisdiction of certain actions, even though the defendant be without the state, and prescribe a method of service by publication of the process in newspapers, etc.; but this does not give personal jurisdiction, and a judgment rendered in such an action only affects such property as the defendant may have within the state. Most questions affecting real property must be determined within the jurisdiction where the property is situated. However, a court of equity having jurisdiction over the person of the owner of real estate situated in a foreign state may compel him to convey it if he has contracted to do so, thus affecting the ownership of property outside its jurisdiction. Crimes are of such a local nature that a foreign court has no jurisdiction to try a culprit captured outside the state in which the crime was committed. Ordinary debts arising out of contract may be sued upon in the courts of any state having jurisdiction of one of the parties.

Usually the judicial system of a state is so regulated that its various courts do not have concurrent jurisdiction; but when this does occur, the court first assuming cognizance of an action is permitted to proceed with it to a final determination, and the fact that an action is pending in one court is a defense if the same cause is sued on in another. The jurisdiction of the federal courts in the administration of national laws is superior to that of the state courts, and where they conflict the United States courts will stay proceedings in the state courts, as in bankruptcy proceedings.

The effect of lack of jurisdiction of a court over a cause of action is to render a judgment obtained therein absolutely void. Objection to

this defect may be taken at any stage of the proceedings, and a judgment so rendered may be ignored or disregarded by the parties affected thereby. Thus, a decree of divorce granted by a court without jurisdiction leaves the parties married, as before, and imposes no duty on other courts, of the same or of other states, to recognize the validity of the divorce so granted.

The term "jurisdiction" is also commonly employed in England and the United States to describe the district, state, or country within which a tribunal or a judicial system exercises its powers. Thus, in the United States we speak of a foreign country or even a sister state as "a foreign jurisdiction" or "a different jurisdiction," etc.

See COURT, VENUE; CONFLICT OF LAWS; INTERJUNCTION, DECREE, ETC. Consult the authorities referred to under JURISPRUDENCE; CONFLICT OF LAWS.

JURISPRUDENCE (Lat. *jurisprudentia*, *juris prudentia*, knowledge of the law, from *juris*, gen. sing. of *jus*, law, and *prudentia*, knowledge, from *providere*, to foresee, from *pro*, before + *videre*, to see). 1 In ancient Rome, the word "jurisprudence" was used in a sense very close to its etymological meaning. Those men who were so skilled in the law (*juris periti*) that they could foresee its development, declaring what the rule would be in a novel or otherwise doubtful case, were termed *juris prudentes*; and the body of law built up by their concurrent and constant interpretation was *juris prudentia*. In the Republican period these law finders owed their authority to the general recognition of their knowledge and ability (hence *juris consulti*) and not to any official position. From the time of Augustus they were designated by the Emperor, by bestowal of the *jus respondendi*; in the following period they were drawn more and more into the direct administration of justice; and at the close of the second century nearly all the *juris prudentes* were judges in the modern sense of the word. In the Republican and the Imperial period alike, however, the *juris prudentes* developed the law by interpretation, and the *juris prudentia* was practically what English-speaking peoples call "case law" (See CIVIL LAW). Both in France and in Spain the word "jurisprudence" (*jurisprudence*, *jurisprudencia*) is still commonly employed in this sense. Abstractly it means the judicial interpretation of the law; in the concrete it often designates a collection of decisions, or, as we say, "reports." In English, also, the word is sometimes used in this sense, as when we speak of "equity jurisprudence."

2. More commonly, however, especially in modern times, English-speaking peoples use the word "jurisprudence" to designate what was often called at an earlier period the philosophy of law, and what continental writers now call the theory or the science of the law. An English treatise on jurisprudence, or on the science or principles of law, undertakes to determine what law is, i.e., what are the essential elements in our conception of law; what relation law bears to the cognate social sciences, politics, ethics, economics, etc.; how law originates (popular customs, judicial usage, legislation), and how it ceases to exist (desuetude, change of usage, abrogation, or repeal); how it is applied (with reference to persons, time, and place), and how it is enforced (sanctions). Jurisprudence also analyzes and defines the principal conceptions with

which law operates, e.g., legal relations, rights, and duties. It may undertake to classify law and to construct a system or framework in which every rule of modern law (or perhaps of all law, past and present) shall find an appropriate place. It may—although it more rarely does—attempt to classify all the relations which the law recognizes or creates and which it regulates or orders, e.g., the relations of state and government to other forms of association and to the individual, and the relations of private associations and of individuals to each other. It may—although it still more rarely does—analyze the fundamental conceptions of the family, of property, and of succession. Such detailed investigations must ordinarily be sought in special treatises. English writers on jurisprudence usually confine themselves to what the Germans call “the general part” of legal theory.

Another limitation observable in works on jurisprudence is that they deal chiefly with private law, i.e., with the law which the courts administer in civil proceedings. It is sometimes affirmed (as by Blackstone) that public or political law lies outside of the proper field of jurisprudence and in the field of political science. When this is not affirmed, it is nevertheless noticeable that the attention of writers on jurisprudence is mainly directed towards private law, that their definitions frequently ignore the public-law point of view, and that their categories are private-law categories. Thus, Austin tries to force all public law into the law of fictitious and abnormal persons.

The principal modern schools of jurisprudence are the natural-law school, the analytical school, the historical school, and the comparative school. The differences between the first three are mainly to be found in their views of the nature and origin of law and its relation to ethics.

To the natural-law jurist law is antecedent to the state; to the analytical jurist it is the creation of the state; to the historical jurist state and law are social products, developing side by side, each influencing the other. To the natural-law jurist law is cognizable by pure reason; to the analytical jurist it is the command of the sovereign, to the historical jurist it is the formulated wisdom of the race. To the natural-law jurist law is applied ethics, and, in the extreme form of the theory, that which is not right is not law. To the analytical jurist a law which commands what is ethically wrong or forbids what is ethically right is not the less a law if it proceeds from the political sovereign. The historical jurists accept in this respect the position taken by the analytical school; but they point out that it is difficult for a lawmaker to act otherwise than in accord with the contemporary sense of right, and that laws which run counter to that sense are not likely to be enforced. Historical jurisprudence differs from analytical jurisprudence chiefly in emphasizing the great part played by social custom in developing and establishing law. To the analytical jurists customary law, including judicial custom, is an anomaly. They do not like it; they try to explain it away; they would fain abolish it by covering the whole field of social relations with written codes. The natural-law school has its roots in the Stoic philosophy and the Roman jurisprudence; it was increasingly dominant in Europe from the Reformation to the close of the eighteenth century. (For the principal forms of the theory and the chief writers, see

NATURAL LAW.) It has now few adherents; the largest number, probably, are in the United States.

The theory of the analytical school was first sharply formulated by Hobbes in his *Leviathan*, but it became dominant in the English-speaking world mainly through the writings of Austin. The term “analytical” is purely English; but the views of this school neither originated in, nor are they confined to, England. The tendency to exalt the function of the law, reared on the Continent at the close of the Middle Ages and was associated with the efforts of the national states, as they developed increasing administrative unity, to get rid of the chaos of varying provincial and local customs which had taken form during the Middle Ages—an end which could be attained only by national legislation, and which has been fully attained only by the adoption of national codes. See CODE.

The historical school dates from the nineteenth century. Cujacius in the sixteenth century gave a powerful impulse to the historical study of law, and Montesquieu and Burke in the eighteenth century represented the same reaction against natural-law ideas which Savigny represented in the nineteenth, but the last-named jurist first clearly defined the principles of historical jurisprudence in 1814. The historical method was naturalized in the English-speaking world chiefly by the writings of Henry Sumner Maine. The substitution of historical investigation for a priori reasoning has been so fruitful of results that few European jurists at the present time would admit that they were not adherents of this school.

There is no antagonism between it and the comparative school. This latest school, or tendency, represents only a widening of the field of investigation. Not only is each national law to be studied historically, but the various national systems are to be compared at similar stages of development. As a result of this process, not only may the normal course of legal development be discovered, but that which is universal and human may be separated from that which is particular to a single nation or to a special stage of development, and then, as Jhering hoped, it may eventually become possible to write a history of the law of the world. Thus far chief attention has been given to early law. Some of the best-known workers in this field are Maine, Holmes, Maitland, Ames, Pollock, Fustel de Coulanges, Jhering, Kohler, and Post.

The comparative work of legal historians has been extensively supplemented by that of ethnologists, and especially interesting investigations have been made in early family law. (See MARRIAGE.) The tendency to hasty generalization which inevitably appears in all new lines of research is being checked. In particular it is coming to be recognized that the customs of savages at the present day do not always throw light upon the institutions of prehistoric Europe; backward peoples, as Maitland observes, have probably failed to find the right road. While little comparative work has thus far been done in what may be called the middle periods of legal development, much is being done in the field of modern legislation. The French Société de Législation Comparée has for many years published monthly bulletins and annual compilations of French and foreign legislation; the British Society of Comparative Legislation pays especial attention in its *Journal* to the move-

ment of legislation in the British colonies and dependencies; while the German Vereinigung für vergleichende Rechtswissenschaft is devoting itself more extensively to studies in early law and in comparative historical jurisprudence.

3. A loose use of the word "jurisprudence," which has nothing in common with the meanings above discussed, makes it practically equivalent to law. Thus, writers speak of medical jurisprudence, meaning simply those parts of the law which are most closely connected with medicine, and in the discussion and development of which the collaboration of lawyers and medical men is highly advantageous. It would be equally legitimate to speak of mining jurisprudence.

Bibliography. The following list contains the more recent general treatises in many of which full information will be found concerning the older literature. It includes, also, some of the more recent special works of value. English works: Austin, *Lectures on Jurisprudence* (4th ed., London, 1873); Lorimer, *Institutes of Law: A Treatise of the Principles of Jurisprudence* (2d ed., Edinburgh, 1880); Holmes, *The Common Law* (Boston, 1881); Clark, *Practical Jurisprudence* (Cambridge, 1883); Lightwood, *Nature of Positive Law* (London, 1883); Markby, *Elements of Law* (3d ed., Oxford, 1885); Maine, *Ancient Law* (11th ed., London, 1887); Hastie, *Outlines of Jurisprudence* (Edinburgh, 1888); Pollock, *First Book of Jurisprudence* (London, 1896); Holland, *Elements of Jurisprudence* (9th ed., New York, 1900); James Bryce, *Studies in History and Jurisprudence* (Oxford, 1901); H. Taylor, *Science of Jurisprudence* (New York, 1908); T. E. Holland, *Elements of Jurisprudence* (11th ed., Oxford, 1910); Matland, *Collected Papers* (Cambridge, 1911); P. de Tourtoulon, *Philosophy in the Development of Law* (Boston, 1913); I. Vanni, *Positive Philosophy of Law* (ib., 1913). French works: Fustel de Coulanges, *La Cité antique* (9th ed., Paris, 1911); L. Duguit, *L'Idée moderne du droit* (2d ed., ib., 1883); Beausserie, *Principes du droit* (ib., 1888); F. Orban, *Cours d'encyclopédie du droit* (Liège, 1895); Boistel, *Cours de philosophie du droit* (Paris, 1899). German works: Goldschmidt, *Uebergriiffe der historischen Schule* (Berlin, 1886); Jhering, *Der Kampf ums Recht* (10th ed., Vienna, 1891); Arndts, *Juristische Encyclopadie* (9th ed., by Grüber, Stuttgart, 1895); Jhering, *Der Zweck im Recht* (3d ed., Leipzig, 1899); G. Maas, *Bibliographie der deutschen Gesetzgebung und Rechtswissenschaft* (Berlin, 1906). For a further special bibliography, see NATURAL LAW.

JURUA, zhō'ru-ā or hō'ru-ā. A tributary of the Amazon. It rises in the Andes Conomamas in Peru, flows northeast through a thinly populated and little known forest region of west Brazil, and after a winding course of about 1200 miles joins the Amazon near the town of Fontebao, in long. 66° W. (Map: Brazil, D 5). It is navigable for one-third of its course and receives numerous tributaries, many of them unexplored. During high water almost the whole of its valley is flooded.

JURY (OF. *juree*, sworn jury, from ML. *jurata*, sworn body of men, from Lat. *juratus*, p.p. of *jurare*, to swear, from *jus*, right, law). A body of laymen who are constituted the judges of the truth of the facts in dispute between the parties to the trial of an action at common law. The exact origin of the jury system is not known

with certainty, various writers having attributed it to different European peoples which at an early period developed methods of trial not unlike the early jury trials in England. It seems probable that the jury in England was derived directly from the Norman institution of recognition by sworn inquest, which was substituted by the Norman conquerors for the method of trial by battle. The *Curia Regis*, or King's Court, might direct the sheriff to select four knights of the county, by whom 12 knights were selected to serve as recognitors, whose duty it was, after being duly sworn, to inquire as to various matters of interest to the new rulers of England which might be subject of public inquiry—as, e.g., matters affecting taxation of a subject. As early as the reign of Henry II (1154-89) it had become customary for suitors in certain cases affecting the title to real estate to apply to the *Curia Regis* for the summoning of recognitors to ascertain either from their own knowledge or upon inquiry from others the truth of the matter in issue, and their verdicts, if unanimous, were accepted as conclusive. It was natural that other questions of fact arising in the King's Court should be disposed of in a similar manner, and the gradual transformation of the recognitors into the common-law jury followed as a matter of course. It is to be noted that originally the jurymen were not only judges of fact, but they were witnesses oftentimes selected because of their knowledge of the customs and the people of the locality, and possibly of the suitors themselves. During the reign of Henry IV, however, we find the judges of the courts of common law restricting the jury to the performance of its function as a judge of fact upon the evidence submitted to it, which is the single function of the jury in modern practice.

The limitation upon and the manner of the exercise of the jury's function will be best understood by tracing the successive steps in the trial of an action, either civil or criminal, at common law before a jury. This jury is commonly called a petit jury, also a common or traverse jury. The first step towards summoning a jury is the issuing of a writ or precept of a court having jurisdiction over jury trials directed to the sheriff and called at common law a *venire facias* (from the language of the writ, meaning 'cause to come'), commanding him to summon citizens residing in the county to attend at a term of court for the purpose of serving as jurors. The jurors thus summoned are then said to be empaneled (from the sheriff's panel, or parchment, containing the list of jurymen). At the trial the selection of the jury is made subject to the direction of the presiding judge. The names of the jurymen are drawn by lot by the clerk of the court, and as their names are called the jurymen take their seats in the jury box until 12 are thus chosen. The parties to the action or their attorneys may then exercise their right to eliminate undesirable members from the jury by means of challenge. (See CHALLENGE.) Either party is at liberty to examine the jurors for the purpose of ascertaining whether cause for challenge in any particular case exists. After a satisfactory jury has been drawn, the jury is sworn, and the trial is begun. (See TRIAL.) The attorney for the prosecution in a criminal case, or for the plaintiff or for whichever party has the affirmative in a civil action, then opens the case by a brief

address to the jury, outlining the facts which he intends to prove. He then calls his witnesses, who are examined by him and cross-examined by opposing counsel. The attorney for the defendant then calls his witnesses, who are examined and cross-examined in like manner. In general, during the progress of a trial, all questions of law are to be determined by the court and questions of fact by the jury. The limits of the inquiry as to facts are determined by the pleadings (q.v.) and the rules of evidence (q.v.). Whether evidence is properly admissible or not is a question for the court, but the weight and credibility of the evidence admitted are to be determined by the jury. The court, however, may decide a question of fact without sending the question to the jury, if there is no conflict of evidence on the point. The court may also interpret written instruments received in evidence without the aid of the jury. After all the evidence has been given, if a case is made for the jury (i.e., if there is conflicting evidence or a doubtful question of fact), the counsel for the defendant "sums up" (i.e., addresses the jury, reviewing the evidence in the case and commenting upon it in a manner favorable to his side of the case); he is followed in like manner by counsel for the plaintiff or prosecution, as the case may be. The judge then makes his charge to the jury. The charge is a statement of the rules of law applicable to the evidence in the case, and it is given for the purpose of aiding the jury to render a correct verdict. If properly given, it leaves all question of fact to be determined by the jury, thus frequently requiring nice discrimination on the part of the presiding judge. The jury then retires from the courtroom and is locked into a room until an agreement as to the verdict is reached, or until the presiding judge deems it improbable that an agreement will be reached. In case no agreement is reached, a new trial may be had. All the 12 members of a jury must agree upon a verdict, which in a civil trial may be "for the plaintiff" or "for the defendant," and in a criminal trial "guilty" or "not guilty." The verdict of a jury is decisive and cannot be disturbed unless rendered contrary to law or against the weight of evidence, in which case it may be set aside by the presiding judge, or the judgment rendered thereon may be set aside on appeal. When the jurors return a verdict which is obviously opposed to the principles of right and justice, it is now sometimes called a *false verdict*, although that expression is really contradictory, since verdict means literally, as it formerly did practically, a "true dictum," or saying. See VERDICT.

In certain cases, where there is no serious dispute of fact, but the question involved is one of law, the jury is allowed, on consent of the parties or direction of the court, to find a special verdict which is merely a statement of the facts of the case. This special verdict is then submitted to and decided by the court.

Special juries (i.e., juries specially selected in order to secure jurymen of more than common intelligence) were known at common law and were expressly authorized by the statute 3 Geo. II, c. 25. Statutes in many of our States now provide for the selection of special juries for the trial of cases of great importance or difficulty. See GRAND JURY.

Consult: Stubbs, *Constitutional History of England* (Oxford, 1878-83); Lesser, *Historical*

Development of the Jury System (1893); Forsyth, *Trial by Jury*; Thayer, *Preliminary Treatise on Evidence at the Common Law* (Boston, 1898); Pollock and Maitland, *History of English Law* (ib., 1899); G. J. Edwards, *Grand Jury Considered from an Historical, Political, and Legal Standpoint* (Philadelphia, 1906); T. F. Hamilton (comp.), *Handbook for Grand Jurors* (Albany, 1906); Frederick Sackett, *Instructions to Juries* (3 vols., Chicago, 1908); A. C. Train, *The Jury System: Defects and Proposed Remedies* (Philadelphia, 1910).

JURY. A contrivance designed temporarily to replace the regular fitting of a ship which has been lost or received such serious injury as to be useless, as, *jury mast, jury rig, jury rudder, jury anchor, etc.*

JUS AC'CRESCENDI. See JOINT TENANCY, SURVIVORSHIP.

JUS GENTIUM, jûs jën'shî-ûm (Lat., law of nations). By the Romans the term was used to designate universal law and included all those rules which were observed by all the nations with which they were acquainted. This body of law included not only what we should call rules of international law, such as the inviolability of envoys, but also rules of commercial law, such as the rule that sale and delivery transfers ownership. For the relation of *jus gentium* to the Roman national law, see CIVIL LAW.

In the Middle Ages *jus gentium* acquired the narrower meaning of the body of rules observed by independent states in their intercourse with each other, i.e., international law (q.v.).

JUS NATU'RÆ, or NATURÆ (Lat., law of nature). Literally, the law of nature or natural law. By the Romans this term was sometimes used as equivalent to *jus gentium*, since the rules observed by all nations were presumably natural rules. Under the influence of the Stoic philosophy, however, they frequently used the term in a purely ethical sense and contrasted natural law, in the sense of natural right or justice, with those rules which, although universally observed, seemed to them wrong and unreasonable. See NATURAL LAW.

JUS PRIMÆ NOCTIS (Lat., right of the first night). A term used in anthropological and juristic literature to indicate the privilege granted by law or custom to other persons than the bridegroom of cohabiting with the bride on the first night or nights after marriage. For the legalized form of this institution as it has been alleged to have existed in the Middle Ages in Scotland, France, and other parts of Europe there is no trustworthy evidence. The legend that the feudal lord in these places exercised such a right over the newly married bride of his vassal is now supposed to have originated in the sixteenth and seventeenth centuries and to have been an incorrect inference from the undoubted license of the feudal lord and from the legal requirement of a fee from the vassal on marriage, which is supposed to have originated in the attempt at commutation of the *jus primæ noctis*. The idea has been called a "learned superstition" and arose partly, perhaps, from the ecclesiastical *droit du seigneur* or right of the lord decreed by the Council of Carthage (397 A.D.), enjoining continence in the newly married couple for the first night and later the first three nights after marriage. In the anthropological field there is evidence of a considerable extension among savage and primitive

tribes of the custom of allowing intercourse with the bride to one or more members of the tribe of more or less exalted position. Among some groups of Eskimos and Indians, as well as among certain Central American tribes, this privilege was accorded to the chief of the tribe or to the high priest or the priests, and in some cases where marriage by capture was in vogue, even to those who assisted the husband in the capture of the bride, as a sort of reward for services rendered, and in other cases to all of the guests on the wedding night, on somewhat the same principles of hospitality as govern the offer of wives in primitive tribes to the transient guest. These customs have been considered by some writers, notably Sir John Lubbock, as remnants of earlier group marriage; but this view is contested by Westermarck and others, who hold that there is no evidence to connect it with group marriage, itself a doubtful hypothesis. Consult: De Labessade, *Le droit du seigneur* (Paris, 1878); K. J. L. Schmidt, *Jus Primæ Noctis: Eine geschichtliche Untersuchung* (Freiburg, 1881); E. Westermarck, *History of Human Marriage* (London, 1908).

JUS RELICTÆ (Lat., right of a widow). In Scots law, the right of a widow to a share in the movable or personal property of her deceased husband. This is a vested or absolute right and cannot be defeated by the husband's will; hence the movable estate of husband and wife is called goods in communion, because, on the death of the husband, there is a division of such goods between the widow, the children, and next of kin of the deceased. If the deceased husband leaves children, the goods in communion are divided into three equal parts, one of which belongs to the widow. If, on the other hand, there are no surviving children or grandchildren, then the goods are divided into two equal shares, one of which belongs to the widow. When the husband dies insolvent, the wife cannot claim her *jus relictæ* in preference to the creditors. Though the widow has this right to her *jus relictæ* at common law, yet if she entered into an antenuptial contract by virtue of which she accepted an equivalent provision, her right may be defeated, provided the contract expressly stated the one to be in substitution for the other. In England there is no such absolute right of a widow to a share of a husband's goods, unless he died intestate, in which case she gets a similar share of the personal estate by virtue of the statute of distributions. As to the corresponding right of the wife in England and America to the real property of her husband, see DOWER; JOINTURE.

JUSSERAND, zhū's'-rān', JEAN ADRIEN ANTOINE JULES (1855-). A French diplomat and scholar, born at Lyons and educated in the universities of Lyons and Paris. Entering the diplomatic service at 21, he held a variety of posts—was Councilor of Embassy at London (1887-90), Minister to Denmark (1898-1902), and then Ambassador at Washington, where he became dean of the diplomatic corps. He was made Grand Officer of the Legion of Honor and a corresponding fellow of the British Academy. His works, some of which deal with English literary subjects, include: *Le théâtre en Angleterre depuis la conquête jusqu'aux prédécesseurs immédiats de Shakespeare* (1878); *Les Anglais au moyen âge* (1884), which was crowned by the Academy and translated into English by Lucy T. Smith as *English Wayfaring Life in*

the Middle Ages (1889); *Le roman anglais* (1888); *Le roman au temps de Shakespeare* (1888; Eng. trans. by Miss E. Lee, 1890); in English, *A French Ambassador at the Court of Charles II* (1892); *L'épopée mystique de William Langland* (1893); *Histoire littéraire du peuple anglais des origines à la renaissance* (3 vols., 1895-1909); *Les sports et jeux d'exercice dans l'ancienne France* (1901); *Ronsard*, in series, *Grands Ecrivains de la France* (1913).

JUSSIEU, zhū'sé-ē'. The name of a family which for more than a century and a half has numbered among its members some of the first botanists of their age.—ANTOINE DE JUSSIEU (1686-1758) was born in Lyons. He succeeded Tournfort in 1708 as professor at the Jardin du Roi and published various works on anatomy, zoology, and botany, among them an *Appendix to Tournfort* (Lyons, 1719). He made several journeys to foreign countries to collect plants, on which occasions he was accompanied by his younger brother Bernard, who cooperated with him as his assistant.—BERNARD DE JUSSIEU (1699-1776) was born in Lyons. He obtained the degree of M.D. at Montpellier in 1720 and at Paris in 1726, succeeded S. Vaillant as demonstrator of botany in the Jardin du Roi in 1722, and published various works on zoology and botany which at the time were considered valuable. In a brief manuscript, which he forwarded to Linnaeus during his incumbency as superintendent of the gardens at the Petit-Trianon, to which position he was appointed in 1759, he laid the foundation of the natural method of plant classification which was more fully elaborated by his nephew Antoine Laurent.—JOSEPH DE JUSSIEU (1704-79), brother of Antoine and Bernard, was educated for medicine, but became a learned botanist and noted engineer. In 1735 he accompanied an expedition to Peru and stayed in South America collecting natural history specimens until 1771, when he returned to France, having lost the greater part of his collection. He introduced the heliotrope into France.—ANTOINE LAURENT DE JUSSIEU (1747-1836) was born in Lyons and richly deserved the heritage left to him by his learned and disinterested relatives. At the age of 17 he began his botanical studies under his uncle Bernard, and four years later was nominated demonstrator and assistant to Lemonnir, the professor of botany in the Jardin du Roi. He at once began to reform the arrangement of the gardens and collections of plants under his charge and to apply to them his own and his uncle's ideas in regard to the natural method. For 30 years he continued to develop his novel views, and when his *Genera Plantarum*, which he began in 1778, was finally completed in 1789, the natural system was finally established as the true basis of botanical classification. In 1793 he became professor of botany in the newly organized Jardin des Plantes, where he continued to teach till 1826, when blindness compelled him to resign his chair to his son Adrien. During his tenure of office he founded the library of the museum, which is one of the best in Europe. His papers in the *Annales du Muséum* (from 1804 to 1820) and his articles in the *Dictionnaire des sciences naturelles* rank among the most valuable contributions to the literature of botany and embody all the result of his own investigations.—ADRIEN DE JUSSIEU (1797-1853) was born in Paris. For the degree of M.A. which he obtained in 1824 he presented a mem-

oir of the Euphorbiaceæ which attracted wide attention and was followed by equally important monographs upon the Rutaceæ, Meliaceæ, and Malpighiaceæ. His *Embryos of the Monocotyledons* (1844) was to have been followed by a series of papers on similar subjects, but ill health compelled him to relinquish this project. He was also prevented by the same cause from extending his *Cours élémentaire de botanique* (1848) into a complete and general treatise. This was translated into other European languages. In 1831 he was elected a member of the Academy and shortly before his death was nominated to the presidency of that body. He contributed many valuable papers to the *Annales du Muséum*, the *Comptes Rendus*, and the *Dictionnaire universel d'histoire naturelle* and other publications on natural sciences. His influence as a lecturer was of great importance.

JUSSIEU, LAURENT PIERRE DE (1792-1866). A French educational writer and moralist, nephew of Antoine Laurent Jussieu. Among his writings the most popular is *Simon de Nantua, ou le marchand forain* (1818). It passed through more than 30 editions and was translated into nearly a dozen languages. For a work of similar description, entitled *Œuvres posthumes de Simon de Nantua* (1829), he received the Montyon prize. From 1839 to 1842 he was a member of the Chamber of Deputies.

JUSTE, THÉODORE (1818-88). A Belgian historian, born in Brussels. He was very successful in arousing interest in Belgian history and in promoting, as Secretary of the Board of Education, the national method of instruction. Among his numerous works, very unequal in merit, may be mentioned: *Histoire de Belgique* (1840); *Précis de l'histoire moderne considérée dans ses rapports avec la Belgique* (1845); *Précis de l'histoire du moyen âge* (1847-49); *Histoire du congrès national de Belgique, ou de la fondation de la monarchie belge* (1850); *Histoire de la révolution des Pays-Bas sous Philippe II* (1855-63); *Le soulèvement de la Hollande en 1813 et la fondation du royaume des Pays-Bas* (1870); *La révolution belge de 1830* (1872); *Guillaume le Taciturne, etc.* (1873); *La révolution de juillet, 1830* (1883); and the biographical work, *Les fondateurs de la monarchie belge* (27 vols., 1865-81).

JUSTI, yus'tè, FERDINAND (1837-1907). A German Orientalist. He was born at Marburg, educated there and at Göttingen. In 1861 he became docent, and in 1865 professor of comparative philology, at Marburg. He wrote. *Ueber die Zusammensetzung der Namen in den indogermanischen Sprachen* (1861); *Handbuch der Zendsprache* (1864), an edition of the *Bundehesh* (1868); *Geschichte des alten Persiens* (1879); *Dictionnaire kurde-français* (1879); *Kurdische Grammatik* (1880); *Geschichte der orientalischen Völker im Altertum* (1884); *Iranisches Namenbuch* (1895); *Hessisches Trachtenbuch* (1900), and the monograph, "Geschichte Irans von den ältesten Zeiten bis zum Ausgang der Sassaniden," in the *Grundriss der iranischen Philologie*, vol. ii.

JUSTICE (OF, Fr *justice*, from Lat. *justitia*, justice, from *justus*, just, from *jus*, right, law). One of the cardinal virtues of the ancients, and the name for a principal aspect of social and moral duty in all ages. If we inquire into the nature of justice by examining moral and legal judgments current in civilized communities, we find such instances as the following:

it is unjust to deprive a man of his personal liberty, his property, or any other thing by law belonging to him; justice therefore requires us to respect each one's *rights* before the law. Sometimes, however, we call the law itself unjust, in which case we may sympathize even with disobedience to it. It is then supposed that there is some higher law that should have preference—as, e.g., the moral law. Thus, it is conceived by most men at the present day to be unjust to hold human beings in slavery, even though slavery may be countenanced by the law of the land. It is, however, only when the law has failed to keep pace with the growth of public opinion on moral questions that an institution like slavery can be sanctioned by the law and yet condemned as unjust by the most intelligent members of society. Other differences between legal and moral justice arise from the limitations of the law, which cannot expediently undertake to regulate all the details of human life. Only those acts which it is for the welfare of society to enforce by external sanction may properly come under the cognizance of the law; hence there are necessarily many kinds of conduct which are morally unjust, and yet which are not recognized by law as unjust. Moral justice may, perhaps, be defined as allowing each man such freedom of action, security of possession, and realization of expectations based on custom as are compatible with the welfare of society. There is no such thing as absolute justice, if by that is meant any particular method of treatment which any man has a right to expect of society, regardless of the times in which he lives and of the character of his life. Consult: Willoughby, *Social Justice* (New York, 1900); F. M. Stawell, "Modern Conception of Justice," in *International Journal of Ethics*, vol. xix (London, 1908), also authorities referred to under ETHICS.

JUSTICE. In legal language, justice is sometimes identified with law, as when we speak of the "administration of justice" or of "courts of justice." Even in legal discussion, however, the term is constantly used in an ethical sense, as when it is said that a decision is legally correct but unjust. To the layman such an admission is a confession that the law is wrong and should be amended. This, however, is not always true. Law and justice cannot be brought into perfect harmony. It is necessary, above all things, that law be certain; that the individual shall be able to ascertain in advance the results which the law will attach to his acts or his omissions. Perfect justice demands that every controversy be adjudged on its peculiar merits, that the intelligence of each party, the circumstances under which he acted, his ignorance or knowledge, his good or bad intent, and an indefinite number of other considerations be taken into account. Should the law attempt to provide in advance for all these endless variations in so complex an organism as human society—an organism, moreover, which is often in process of change—the law would become so vast in its bulk and so confused in its provisions that it would be impossible for the keenest intelligence and the greatest industry to master its rules; and even then it would be incomplete, since, as Grotius has said, "there can be no finite rule of an infinite matter." Should the courts be empowered to do justice in the single case without regard to the law, there would no longer be any law. In either case an uncertainty, a lack of social

order, would result which would be a greater evil than occasional or even frequent injustice.

The practical solution of the difficulty is found in compromise. The law classifies persons, acts, and relations, and it shapes its rules to suit the average person, the ordinary act, the normal relation. The classification, rough at first, becomes increasingly refined; but in its highest development law deals, and must deal, with generic persons and cases, and not with the real individual or the special case.

Law is not primarily a system of justice, but a system of order. Courts were not established to do justice but to terminate controversy. Equity, as was finely said by Aristotle, corrects the law where the law is defective by reason of its universality; but, historically, equity has never meant anything but a greater approximation of law and justice. In England, as Lord Bacon said, it was "ordained to supply the law and not to subvert the law." Equity draws new distinctions, unknown to the older and cruder law, its precedents harden into rules; and the result is simply a new body of law with a more refined classification of the phenomena of social life. Consult the authorities referred to under JURISPRUDENCE; LAW.

JUSTICE, CHIEF. See CHIEF JUSTICE.

JUSTICE, DEPARTMENT OF. One of the executive departments of the United States, at the head of which is the Attorney-General, appointed by the President for a term of four years. Although the office of Attorney-General was created in 1789 and the incumbent of the office was from the first a member of the cabinet, it was not until 1870 that it was erected into a separate department. By the Act of June 22 of that year the several officers of the Federal government, of whom there were some half-dozen or more, were placed under the supervision of the Attorney-General, with the hope of bringing about greater uniformity in the construction and application of the laws. The Attorney-General is the chief law officer of the government, and, as a member of the cabinet, ranks fourth in the line of succession to the presidency. It is his duty to advise the President on any questions of law that may arise in the course of the administration, and also to give his opinion when requested by any of the heads of departments upon legal questions concerning matters affecting their departments. The opinions rendered by the Attorney-General are from time to time published by the government, and next to the decisions of the courts they are regarded as authority on the points covered. The Attorney-General is the legal representative of the government in all cases at law to which the United States is a party, and may appear in court in person or direct which one of the Assistant Attorney-Generals shall appear, and may employ special counsel to aid in the conduct of the cases in which the government is interested. He is furthermore charged with the general supervision of the United States district attorneys and marshals, directs and instructs them in their duties, and may employ special counsel to aid the attorneys in the prosecution of cases to which the United States is a party. He examines the titles to lands or other property which the government intends to purchase for forts, dockyards, building sites, or other public purposes, and makes an annual report to Congress of the business of the department, including statistical information concerning the civil

and criminal cases tried before the United States courts, the number of pardons granted by the President, the amount of fines and forfeitures imposed, and such other information bearing upon the administration of justice as he may deem proper. Other duties of the Department of Justice are the supervision of the penal and reformatory institutions of the United States, the recommendation of judicial appointments, the examination of the accounts of the marshals, attorneys, and other judicial officers, the investigation of applications for clemency, the administration of the national bankruptcy law, and the supervision of the commission to revise and codify the criminal and penal laws of the United States. In 1868 two Assistant Attorney-Generals were provided for—one of whom assists in the Supreme Court, the other in the Court of Claims. There is also an Assistant Attorney-General for the Interior Department, one for the Post Office Department, and one in charge of Indian depredations claims. In 1870 the office of Solicitor-General was created, the incumbent being ranked as the second officer of the department. He conducts cases in the courts at Washington and, in case of a temporary vacancy or absence of the Attorney-General, acts in his stead. The Act of 1870 also transferred to the new Department of Justice the solicitors from the Interior, Treasury, and Navy departments, and the examiner of claims from the State Department.

JUSTICE, LORD. In England a person invested with the royal authority for limited purposes and for a limited time. From the times of the Norman and Plantagenet kings it has been the occasional practice in England for the sovereign to appoint one or more persons called lords justices to act as his substitutes in the supreme government during his absence from the Kingdom. Subsequent to the Revolution these appointments have been made by letters patent under the great seal, and the authority of Parliament has sometimes been invoked in confirmation of their powers. On five occasions such appointment was made by William III when going abroad, though, while his Queen was alive, he delegated his authority to her during his absence. The statutes 12 and 13 Wm. III, settling the succession on the house of Hanover, provided "that no person who shall hereafter come to the crown shall go out of the dominions of England, Scotland, or Ireland without consent of Parliament"; but this clause was repealed by 1 Geo. I, c. 2, and the first sovereign of the house of Hanover, during five of his absences in Germany, made an appointment of lords justices. George IV, on his visit to Hanover, delegated his authority to 19 guardians, of whom the Duke of York, heir presumptive, was one. On none of the absences of Queen Victoria from the Kingdom was there any delegation of the royal authority; and on one of these occasions Lord Chancellor Lyndhurst stated in the House of Lords that the law officers regarded it unnecessary, in point of law, to appoint lords justices—an opinion in which he concurred. The practice of the Queen in this respect was followed by her successor, Edward VII. In case of the sovereign's minority a regency has generally been resorted to.

The powers of lords justices have usually been limited in the matter of pardoning and relieving criminals, the summoning or prorogation of Parliament, the disposal of public moneys in the

Treasury, and of Church preferments in the gift of the crown. The lords justices appointed under the commissions of 1719 and 1729 were authorized to continue the existing Parliament by short prorogations till otherwise directed under the royal sign manual, but not to perform the other acts here specified without the special signification of the royal pleasure, except when necessary for the public service. The power to create peers has only once been delegated—by Charles I in 1644; and Lord Herbert, afterward Earl of Glamorgan, in whose favor the right was exercised, was, after the Restoration, compelled to resign by the House of Lords.

Lords justices have sometimes been appointed to carry on the government of Ireland in place of a viceroy, in modern times, this has only been done during occasional absences of the Lord Lieutenant.

JUSTICE, LORD CHIEF. The title given in England to the chief judge of the King's Bench division of the High Court of Justice. It was formerly employed to designate the chief judges of the two great common-law tribunals, the Court of King's Bench and the Court of Common Pleas; but the former of these was, by eminence, known as the Lord Chief Justice of England. Upon the abolition of the Common Pleas division of the High Court in 1881, the chief judge of the Queen's (now King's) Bench division became the sole judicial officer to be invested with the dignity and title of Chief Justice.

JUSTICE CLERK, LORD. A high judicial officer in Scotland, being the second highest judge in point of rank and, in the absence of the Lord Justice General, the presiding judge of the Court of Justiciary. His usual duty is to sit as chief of one of the divisions of the Inner House, called the second division of the Court of Session (q.v.).

JUSTICE GENERAL, LORD. The highest judicial officer in Scotland, also called the Lord President of the Court of Session. Formerly the office of Justice General was a sinecure and not a judicial office, but the title is now, since 1831, associated with that of the Lord President. See COURT OF SESSION.

JUSTICE OF THE PEACE. In Great Britain and the United States, a minor official having both administrative and judicial functions, the latter principally of a criminal nature. In England justices of the peace are appointed by commission of the crown under the great seal, or by act of Parliament or charter, to exercise a certain limited authority in a county or borough. The person who practically appoints to the office is the Lord Chancellor, who in his discretion may include in the commission any person having an estate of £100 a year, clear of all rents and charges. All persons having the above qualification may be appointed justices of the peace; but practicing attorneys or solicitors are not eligible for counties in which they practice. Traditionally the office of justice of the peace is entirely gratuitous. But in modern practice it has been found necessary to deviate from this rule and to appoint in all the cities and many large towns certain paid justices, called stipendiary magistrates, at a fixed salary. In the city of London and certain other places the mayor and certain corporators are constituted by charter justices of the peace by virtue of their office.

The institution of justices of the peace is very

ancient. Previous to 1327 there were conservators of the peace in every county chosen by the freeholders from among the principal men of the county to perform similar duties; but by a statute of Edward III a change took place in the practice, and ever since the election of justices has been exercised by the crown. Gradually the office grew more and more important, statutes being passed from time to time, adding to its duties and jurisdiction, until, in the thirtieth year of the reign of Elizabeth, the form of commission was revised and was settled nearly in the form which is now used. The commission is in the name of the sovereign, addressed to the appointee, by name, directing him "to keep our peace in our county of —, and to keep all ordinances and statutes for the good of the peace, and for the good rule and government of the people, and to chastise and punish all persons that offend against the said ordinances." The commission then authorizes the appointee to inquire "by the oath of good and lawful men, of all manner of felonies, poisonings, enchantments, sorceries, arts, magic, trespasses, forestallings, regratings, engrossings, and extortions whatsoever, and of all crimes and offenses," etc. To these extensive powers conferred by statute were added the more indefinite functions which long custom had vested in justices of the peace, constituting them in large measure the foundation of the peace and order of the state. "The whole Christian world," says Lord Coke, "hath not the like office as justice of the peace, if duly executed." The powers and duties of justices of the peace in England are now mainly governed by a series of statutes enacted during the reign of Queen Victoria (38 and 39 Vict., c. 54; 45 and 46 Vict., c. 50; 11 and 12 Vict., c. 44).

Although the institution of justices of the peace is derived from England, the method employed for their creation differs in the United States from that adopted in the former country and also differs in different States. In some instances they are appointed by the executive, in others elected by the people. Their powers and duties also vary in the different States, but in most they have jurisdiction in minor cases, both civil and criminal. The extent and nature of their powers are usually defined by statute. The distinctive value of this class of magistrates is found in their power to prevent breaches of the peace, and to examine persons charged with the commission of crime or misdemeanor and hold to bail to answer in the upper court, or in default of bail to commit them to jail. In this latter particular their functions are somewhat analogous to those of a grand jury.

Bibliography. Archbold, *Justice of the Peace and Parish Officer* (London, 1842); Stone, *Justices' Manual* (ib., annually), Blackstone's *Commentaries* (4th ed., 2 vols., Chicago, 1899); Pollock and Maitland, *History of English Law* (2d ed., Boston, 1899); Wait, *Law and Practice in Civil Actions and Proceedings in Justices' Courts* (7th ed., Albany, 1902); C. A. Beard, *Office of Justice of the Peace in England* (New York, 1904); E. M. Haines, *Practical Treatise on Powers and Duties of Justices of the Peace and Police Magistrates* (16th ed., Chicago, 1905); A. V. Honeyman, *Honeyman's Justice of the Peace* (5th ed., Plainfield, N. J., 1912); E. Baylies (ed.), *Beard's Justices' Manual of Civil and Criminal Law and Practice for Justices of the Peace and Police Justices in New York* (3d ed., New York, 1913).

JUSTICES' CLERK. An officer, generally a solicitor, appointed by justices of the peace in England to assist them in their duties. Owing to the fact that justices of the peace are not trained lawyers (it has been judicially declared in England that there is no presumption that a justice of the peace knows the law of the land), but are, nevertheless, called upon to administer many branches of the law and to construe acts of Parliament, all of which require considerable legal skill, the justices' clerk is a person of much local influence, and in practical effect guides and controls the justices in all purely legal matters. The justices' clerk is, strictly speaking, not a public officer, but in the nature of an employee of the justice. By recent statutes, however, he has acquired a certain official status and is entitled to receive fees in connection with the business transacted by the justice to whose court he is attached. See **JUSTICE OF THE PEACE**.

JUSTICIARY (jūs-tīsh'ī-ā-ri) **COURT.** The highest criminal court in Scotland. It is in reality the criminal branch of the Court of Session, the highest judicial tribunal in Scotland, and not an independent court. Its judges are seven of the judges of the Court of Session—viz., the lord president, the lord justice clerk, and five others appointed by royal patent. Its quorum consists of three judges. It exercises an appellate as well as an original jurisdiction and usually sits in Edinburgh. See **COURT OF SESSION**.

JUS'TIFI'ABLE HOMICIDE. See **HOMICIDE**.

JUSTIFICATION (Lat. *justificatio*, from *justificare*, to justify, from *justificus*, acting justly, from *justus*, just + *facere*, to do). A defense to a civil or criminal action, admitting the facts alleged in the complaint or indictment, but setting forth other facts tending to show that the defendant had a legal right to do the acts complained of, and that, therefore, the cause of action alleged is not sufficient in law. Facts constituting a legal justification may be pleaded in answer to an indictment for an alleged crime, as where a person is accused of homicide and pleads that he committed the act in self-defense, or that he was an officer of the peace and killed the deceased in a reasonable effort to prevent his escape. Under the common-law system of pleading in civil actions, such a plea is said to be by way of confession and avoidance. The facts constituting a legal justification for an act must be fully set forth in an answer and not alleged as a conclusion of law.

Whether a plea of justification can be sustained or not depends upon the nature of the action and the substantive law involved. For example, in an action against a street-railroad company for negligently running over the plaintiff and injuring him, the defendant cannot plead that it had any legal right to do so, even if it can show that defendant was a trespasser upon its tracks. It may however, plead contributory negligence on his part, which would be in the nature of an excuse rather than a strict justification. Pleas of justification are most common in actions for assault and battery, false imprisonment, libel, slander, and malicious prosecution.

Justification is also employed to denote the proof by sureties on a bond or undertaking that they possess the property qualifications required of them by law. See **ANSWER; DEFENSE; PLEA; PLEADING**.

JUSTIFICATION. In theology, the action whereby men are (1) freed from the penalty of sin and (2) treated as righteous by God. The doctrine is based chiefly upon the teaching of Paul, especially in the Epistles to the Romans and to the Galatians. The Apostle begins the former Epistle by exhibiting the universality of sin. All men, Jews as well as Greeks, have sinned and have therefore no ground of acceptance with God upon the basis of righteousness. Works, then, viewed as single holy deeds, performed in obedience to the divine law, and together constituting a flawless life, will qualify no one for justification before the bar of God. Hence God provides a righteousness of His own. Repentant man, exercising faith in Jesus Christ, shall be forgiven and treated as if he had obeyed the law perfectly for Christ's sake. He shall be "declared righteous." This is justification.

The doctrine was first clearly developed in the scholastic period, especially by Thomas Aquinas. It came into prominence in the Reformation and was carefully defined on both sides. The main difference between the Catholic and Protestant forms of the doctrine lies in the interpretation of the second clause of the definition above. The Catholic doctrine is that God makes man righteous, imparts to him something of His own holiness, in the imputation to him of Christ's righteousness. The Council of Trent defines the Roman Catholic doctrine thus: "Justification is not remission of sins merely, but also the sanctification and renewal of the inward man, through the voluntary reception of the grace and of the gifts, whereby man from unjust becomes just" (sess. vi, chap. vii). It thus includes sanctification and is "infused" righteousness. The common Protestant doctrine was that God does not make the justified righteous, but treats him as if he were righteous—a forensic use. It is equivalent to the forgiveness of sins and is different from sanctification. Protestantism emphasized justification "by faith," which, in the words of the Westminster Confession, is "accounting and accepting their [believers'] persons as righteous, not for anything wrought in them or done by them, but for Christ's sake alone."

The historic Protestant doctrine has a second element besides the forgiveness of the sinner embraced under his justification, viz., the imputation to him of the righteousness of Christ. At first this phrase meant only that he was forgiven for Christ's sake, or, technically speaking, the imputation was of the "passive obedience" of Christ. In the scholastic development of the system the imputation came to be conceived as that of the "active obedience" of Christ, or He was said to have obeyed the law for man, and this obedience, imputed to man, made him righteous before God.

Protestant theology generally held justification by faith because faith is the medium of union with Christ, not because it is an act of obedience or a pledge of future obedience. God's acceptance is through Christ alone. There follow upon it peace, assurance, and holiness of life; but these are regarded as the results, not the causes, of justification. Arminianism (q.v.), however, considered that faith justified not as binding men to Christ, but as being an imperfect righteousness, which God accepted in the place of a perfect righteousness, because of His mercy shown to man through Christ. Swe-

denborg (q.v.) bitterly attacked justification by faith in the interests of the direct mystic vision (*True Christian Religion*, §§ 181, 389), but in general Protestants of all schools have held to it. The Ritschlian school (see RITSCHL) has emphasized justification as the basis of the Christian life. It has defined it as the reception of the sinner, conscious of his guilt, into fellowship with God, or the free forgiveness of sin. Consult Buchanan, *Doctrine of Justification* (Edinburgh, 1867); J. H. Newman, *Lectures on the Doctrine of Justification* (3d ed., London, 1874); Ritschl, *Christian Doctrine of Justification and Reconciliation: Positive Development of the Doctrine* (Eng. trans., Edinburgh, 1900); F. H. S. Denifle, *Luther and Lutherism in der ersten Entwicklung* (2d ed., 3 vols, Mainz, 1904-09); F. B. Westcott, *St. Paul and Justification* (New York, 1913). See ATONEMENT, IMPUTATION.

JUS'TIN (Lat. *Iunianus Justinus*). A Roman historian of whom almost nothing is known, but he lived probably in the third century A.D. His work, *Historiarum Philippicarum Libri XLIV*, is merely a collection of extracts from the large work of Pompeius Trogus (q.v.), an historian of the Augustan age, whose history dealt with the rise of Macedonian authority. Though Justin made his selections somewhat at random, his work is of considerable value to us, as the original has perished, it was much used in the Middle Ages. The latest edition is that of Ruehl (Leipzig, 1886).

JUSTIN, surnamed **THE MARTYR** (c 100-c 165). A Christian apologist of the second century, commonly called Justin Martyr. He was born about 100, in Flavia Neapolis, a Roman city erected on the site of the ancient Shechem, in Samaria. His father, Priscus, was a heathen, and Justin was educated in the religion of his father. He became an ardent student of the philosophy of his age, beginning with the school of the Stoics, but finally adhering to that of the Platonists. According to the story which he himself relates, one day, while wandering along the seashore, he encountered a man of mild and venerable aspect, who led him to the study of the Jewish prophets and the great Christian teacher whom they foretold. The result was his conversion to Christianity, which probably took place at Ephesus about 135. After his conversion he retained the garb of a philosopher, but, as a Christian philosopher, he strove by his writings and his instructions to bring others to the truth which he had himself discovered. From his Jewish acquaintances he got his knowledge of rabbinical literature. He lived for some time in Rome and is said to have been beheaded about the year 165, in the reign of Marcus Aurelius, because he refused to offer sacrifice to the heathen gods. The works of Justin, although not very voluminous, are important for knowledge of Christianity in the second century. The books ascribed to him with certainty are two *Apologies for the Christians*—the first addressed “to Antoninus Pius,” the second “to the Roman Senate”—and a *Dialogue with Tryphon the Jew*, which professes to be the record of an actual discussion held at Ephesus. Some other extant works have been ascribed to him, but on insufficient grounds, and several of his works cited by ancient authors have been lost. The first edition of his works is that of Robert Stephens (Paris, 1551). The Benedictine edition of Justin, by Maran, appeared at

Paris in 1742, and Otto's—the best—at Jena in 1842-46 (3d ed., 5 vols., 1876-81); there is an English translation in the *Ante-Nicene Fathers*, vol. i (New York, 1885). The text of the *Apology* is edited by Krüger (Tübingen, 1904).

Bibliography. C. Semisch, *Justin Martyr: His Life, Writings, and Opinions*, translated from the German by J. E. Ryland (2 vols., Edinburgh, 1843); Purves, *Testimony of Justin Martyr to Early Christianity* (New York, 1889); Flemming, *Zur Beurteilung des Christentums Justinus' des Martyrers* (Leipzig, 1893); Bal-dus, *Das Verhältnis Justinus' des Martyrers zu unseren synoptischen Evangelien* (Münster, 1895); Feder, *Justins des Martyrers Lehre von Jesus Christus, dem Messias* (Freiburg, 1906); C. Martin, *St. Justin, Martyr* (New York, 1911).

JUSTIN I, THE ELDER (452-527). Byzantine Emperor from 518 to 527. His parents were Goths, but he entered as a private into the body-guard of the Emperor and rose to the rank of senator and commander of the Imperial guards under Anastasius I. On the death of the latter, in 518, the army proclaimed Justin Emperor. Feeling that he was unfitted to direct the internal civil administrations, he wisely resigned this duty at first to the quaestor Proclus and later to his nephew, Justinian. His decrees against the Arians led to the break between the Catholics in Italy and Theodoric (q.v.). Some time before his death (Aug. 1, 527) he adopted Justinian (q.v.). Consult J. B. Bury, *Later Roman Empire*, vol. i (New York, 1899).

JUSTIN II, THE YOUNGER (?-578). Byzantine Emperor from 565 to 578. He succeeded his uncle, Justinian I, and had espoused Sophia, the niece of the Empress Theodora, a beautiful and able but revengeful woman. At first he gave promise of a mild rule, but soon his rule became a vacillating one. Through the influence of the Empress Sophia, Narses (q.v.) was dismissed from the exarchy of Ravenna, though the Longobards were meditating an invasion of Italy. These barbarians, on hearing of the disgrace of the one man whom they dreaded, in 568 burst like an avalanche upon Italy. Northern and central Italy was soon in their power. In 574 Justin, who was subject to fits of insanity, decided to name as successor Tiberius, one of his generals. He then retired to private life. Consult J. B. Bury, *Later Roman Empire*, vol. II (New York, 1899).

JUSTINIAN I, FLAVIUS ANICIUS JUSTINIANUS (483-565). Byzantine Emperor from 527 to 565. He was born probably May 11, 483, in the village of Tauresium in Illyricum. His name was Uprauda, which he changed to Justinian. Although of obscure parentage, he shared the success of his maternal uncle, Justin I (q.v.), being invited at an early age to Constantinople, where he received a careful education. When his uncle was elevated to the purple, in 518, he promoted his nephew to one position after another, and in 527, by the advice of the Senate, proclaimed him his colleague in the Empire. Justin survived the step but a few months, and Justinian was crowned as sole Emperor. His long reign is the most brilliant in the history of the later Empire. Although himself without taste or capacity for military command, he had the skill to select able generals, such as Belisarius and Narses. In his first war—that with Persia—he concluded a treaty by which a long-threatened crisis was

warded off temporarily. But the most important event of these early years was a conflict of the so-called Blue and Green factions in the circus in 532, an outburst of political discontent, which went so far as to elect a rival Emperor, Hypatius. Justinian was struck with dismay and made preparations for flight; but the vigor and determination of his Empress, Theodora (q.v.), arrested the revolt. Belisarius, with a relentless hand, repressed the tumult, 30,000 victims having, it is said, fallen in a single day. By the arms of Belisarius the Vandal Kingdom of Africa was reannexed to the Empire (533-534); and the same general and his successor, Narses, restored the Imperial authority in Rome as well as in northern Italy and a portion of Spain (535-554). The second war with Persia (539-562) was ended by Justinian's agreeing to pay an annual tribute. The Slavs and Huns were constantly attacking the Empire on the north and ravaging its territory, so that, in spite of his conquests, he left a weak empire to his successor. He died Nov. 14, 565.

Justinian was a great builder of aqueducts, fortresses, churches (St. Sophia), quays, harbors, and monasteries. These, together with the sums needed for his wars, involved an enormous expenditure, and the fiscal administration of Justinian, in consequence, pressed heavily on the public resources and on the people. It is, however, as a legislator that Justinian has gained his greatest renown. Immediately on his accession he appointed a committee of lawyers, with Tribonianus (q.v.) as chairman, to collect all previous legislative enactments which were still in force and to compile a code. (See CODE.) The authoritative commentaries of the jurists were next collected, digested, and published under the title of *Pandects* (q.v.). The code was republished in 534 with the addition of Justinian's own Constitutions. The third great legal undertaking was the composition of a systematic treatise on the laws for the guidance of students and lawyers. This was published a month before the *Digest*, under the title of *Institutiones* (i.e., Institutes). It is difficult, from the character of his acts and from the nature of our sources (see PROCOPIUS), to form a just estimate of Justinian. There is no doubt of his ability and industry, but he was unscrupulous, vain, and easily influenced. He was passionately devoted to theology and wrote hymns and controversial works.

Bibliography. For his attitude towards the Church, consult Hutton, *Church of the Sixth Century* (New York, 1897). For his reign and life: Finlay, *History of Greece*, vol. 1 (London, 1877); Thomas Hodgkin, *Italy and her Invaders*, vol. iv (Oxford, 1885); Edward Gibbon, *Decline and Fall of the Roman Empire*, vol. iv, edited by J. B. Bury (London, 1901); J. B. Bury, *Later Roman Empire* (2 vols., New York, 1899); Charles Diehl, *Justinien et la civilisation byzantine au sixième siècle* (Paris, 1901); Holmes, *Age of Justinian and Theodora* (2 vols., London, 1905-07); Andrew Stephenson, *History of Roman Law, with a Commentary on the Institutes of Gaius and Justinian* (Boston, 1912), containing a bibliography.

JUSTINIANAPOLIS. See HADRUMETUM.

JUTE (Beng. *jūt*, from Skt. *jaṭh*, matted hair). A fibre produced from two tropical species of Tiliaceæ, the *Corchorus olitorius* and *Corchorus capsularis*, two plants alike in qualities, though slightly different in appearance,

and sown indiscriminately. From the fibre, which is the cheapest known, are produced gunny bags, gunny cloth, and cordage; and from the finer qualities carpets, shirting, coat linings, etc., are made. It is extensively used for mixing with silk, cotton, flax, and woolen fabrics, but, owing to its inferiority, such use of it is a fraud. India produces practically the entire world's supply of jute. The plants grow in most climates and on all kinds of soil, but rich alluvial lands, and lands subject to salt-water tidal influences, particularly favor its production. It thrives in the Gulf States, but its production in America has not been successful, owing to a lack of inexpensive labor for its culture. It is an exhausting crop for the soil. The plant, if weeded once, requires no more attention till cutting time. Its single stalk grows to a height of 12 feet without branches or leaves till near the top. In India the plant is cut while in flower, about three months after sowing. Cut close to the ground, stripped of leaves and branches, it is tied in bundles and steeped from 10 to 20 days in water, to loosen the fibre by rotting the outer bark. After steeping, the stalks are beaten till only the fibre remains. This is cleaned, dried, and made into drums of 70 or 80 pounds. If for exportation, it is pressed into bales of 300 pounds and upward. Fine jute has a beautiful glossy golden appearance and is soft and silky to the touch. Great importance attaches to length and strength of fibre. See Plate of FIBRE PLANTS, under HEMP.

Jute Manufactures. Jute is spun by processes similar to those employed for flax, but, as it is from 10 to 15 feet long, it is necessary to cut it into three-foot lengths before it can be heckled. The fibre, which is obtained by maceration from the inner bark, also requires to be saturated with whale oil and water, so as to soften and render it more elastic, preparatory to spinning. Heckling is the first of the spinning operations, and its object is to remove the coarser portions of the jute and lay the fibres in parallel order. The heckle is a kind of comb, with sharp-pointed steel teeth from 1 to 2 inches in length. Formerly the work was done by hand, but now heckling machines are used. Recently the heckling process has been omitted, and the jute has been spun directly without heckling off the tow. The heckled strips are next taken to the *spreader*, or first drawing frame, where they are spread upon an endless creeping sheet, so as to supply the jute continuously to another part of the machine, where, by a peculiar arrangement of rollers, it is drawn out, through combs of closely ranged steel pins, into a continuous ribbon, called a *sliver*. A number—say 14—of these slivers are then taken to another drawing machine with steel combs and drawn out into one. In like manner some 20 of these slivers are again drawn into one. The first sliver from the spreader has thus, so to speak, been drawn out 280 times its original length; and by continuing this doubling and drawing, the fibres become thoroughly parallel and equalized. The sliver from the last drawing frame is still further drawn out and at the same time receives a slight twist in the roving frame. Finally the bobbins of rove are taken to the spinning frame, and spun into yarn upon the throstle principle. See SPINNING.

Just as in the case of flax, the jute tow from the heckling process is also spun into yarn, in which case it is first carded by means of a

breaker and finisher card, and then *drawn*, *roved*, and *spun*, as above described.

The larger portion of jute fabrics is woven from yarn of the natural color, but for some purposes it is bleached, and, when used for carpets, it is dyed various colors. It bleaches with difficulty, but is easily dyed. Jute fabrics are not nearly so durable as flax, the jute being more brittle and more easily affected by water.

Jute has been manufactured on hand looms by the natives of India for centuries. They made not only the coarse fabric known as gunny, but a fine material which they used for clothing. They also have made a coarse paper, by beating the fibre into pulp, drying it in sheets, sizing it with rice starch, and polishing it with a stone or shell. Since 1857 there have been a large number of jute mills fitted up with modern textile machinery and driven by steam, the number in 1899 aggregating 33.

The first mention of the word "jute" is in 1796, in the manuscript commercial index of the court of directors of the East India Company. It is the Bengal name used by the natives of Cuttack and Balasore, where the first European manufactories were established in the middle of the last century. In 1829 the total export from Calcutta was 20 tons, value £60. In 1833 it had increased sixteenfold, and about 1864-65 the increased demand caused jute cultivation to extend to other districts, the exportation in 1879-80 reaching 4,626,710 hundredweight. In 1897-98 the amount of raw jute exported was 15,000,000 hundredweight, while the exports of jute cloth had increased in 10 years from 37,000,000 to 307,000,000 yards. The number of mills in India increased from 25 in 1889 to about 59 in 1912, and the number of employees for the same period from about 60,000 to 202,000. The production of fibre increased from 1,860,000,000 pounds in 1889 to 4,212,602,000 pounds in 1914. Of the production in 1909 India consumed 48 per cent, Great Britain 14 per cent, Germany 8 per cent, and the United States about 7 per cent. Prior to its rapid development in India, Dundee, Scotland, was the chief centre of the jute industry.

England, Bombay, and America originally divided the exports of jute, and up to the time of the Civil War North America took the largest share of the gunnies. (See GUNNY.) Jute and gunnies are now exported from Bengal to all parts of the world.

Until 1870 the entire cotton crop of the United States was baled in gunny cloth imported from Calcutta. Gradually, however, an increasing amount of jute product has been made in the United States. According to the census of 1880 there were only four establishments in the United States making a specialty of this manufacture. In 1909 the number had increased to 24. They employed 6664 hands, and the value of their annual product was \$10,795,000. The consumption of jute in the United States in 1909 was 151,791,000 pounds, which represented a decrease of over 25 per cent for the 10-year period. The average value of jute rose from 1.7 cents in 1899 to 2.4 cents per pound in 1909.

The quantity, value, and percentage increase for the 10-year period of some of the principal jute products manufactured in the United States in 1909 as reported by the thirteenth census are given in the table in the next column.

The importation of jute and jute butts in 1914 amounted to 212,666,000 pounds, valued at \$11,-

174,028, and in the same year the acreage planted to jute in India was 3,358,737, an increase of 437,777 acres over 1913. The estimated yield was 10,531,505 bales of 400 pounds each.

PRODUCTS	Quantity in pounds	Per cent of increase	Value	Per cent of increase
Rope	27,749,512	177.2	\$1,566,160	238.
Twine other than binder twine	35,516,217	2015.2	2,557,744	2076.1
Flax or hemp mixed with jute	8,907,403	-31.1	936,312	-15.
Yarns	62,512,247	15.2	4,361,550	35.
Carpets and rugs, square yards.	2,206,114	-25.3	549,221	53.6

The production of gunny bagging, into which jute largely enters, amounted to 69,311,288 square yards, valued at \$3,507,482, for the same year. The importation of jute into the United States grew from 79,703 tons in 1903 to 125,389 tons in 1913. The importation of jute bags grew from \$2,061,000 value in 1903 to \$4,268,000 in 1913, and of burlaps and other jute fabrics from \$14,378,000 to \$37,774,000 in the same period.

JÜTERBOG, yu'tër-bög. The capital of a district in Brandenburg, Prussia, 27 miles south of Potsdam (Map Germany, E 2). The fifteenth-century church of St. Nicholas, the fifteenth-century Rathaus, the ancient Abbot's House, the Tetzels Chapel, and the walls with three mediæval city gates are notable features. There are cloth, woolen-ware, and cigar manufactures and a considerable trade in wool, flax, and wine. Pop., 1900, 7407; 1910, 7632. Two miles southwest is the field of Dennewitz, where the Prussians under Bülow defeated the French under Ney and Oudinot, Sept. 6, 1813.

JUTES, jüts. A Low German tribe, closely associated with the Angles and Saxons in the conquest of England in the fifth century A.D. Their name suggests that of the northern peninsula of Denmark, and it is customary to trace them to that starting point. Morley suggests, on the other hand, that Jutland is now occupied by Danes and that men from that peninsula settling on the eastern coasts of England in the days of the Angles were called Danes, not Jutes. Moreover, towns in the Danish settlements have the ending "by," as Grimsby, Fotherby, Ashby, etc., but in the Jute region of Kent, Hampshire, and the Isle of Wight there is not a place that has a name ending in "by."

Bede divides the Teutonic conquerors of England into Angles, Jutes, and Saxons, but Procopius in the sixth century uses the terms Angles, Saxons, and Frisians. Study leads to the conclusion that the invaders of the south of England and those of the seaboard of the Scottish Lowlands, the Jutes and Frisians, were the same people.

It is only a short step from Frisians to Formorians or Pomorians, and the Jutes are identified with the Teutonic rovers who from the coast of the Baltic pushed their conquests to the Shetlands, Orkneys, and Hebrides, landing finally on the Irish coast.

In recent years the name of Jute has come into prominence through studies of subracial types persisting in the actual populations of Europe, although historians had well-nigh lost sight of

them as distinguished from their Angle and Saxon kindred. Following traditions, there have been found around Canterbury in Kent, as well as on the Isle of Wight and in south Hants opposite, men and women with peculiarities in physiognomy which are thought to be due to the Jutish blood. Special marks of the Jutish features consist in the form of the nose and mouth. "The end of the nose is rounded off somewhat sharply, and the septum descends considerably below the line of the nostrils." The lower lip, more particularly, is thick and deep. The Jutish profile has a strong resemblance to that sculptured in the Assyrian marbles. The population in Friesland was not homogeneous in early times, and it is possible that the Jutes may have migrated to south England in separate bodies, at first, like their neighbors, the Angles. If so, these separate intrusions would go far to account for the perpetuation of the peculiarities of this people in England.

Consult the *Antiquary*, vol. xxix (London, 1894), and W. Z. Ripley, *Races of Europe* (ib., 1913).

JUTLAND (Dan. *Jylland*). A peninsula of Europe, having the North Sea on the west, the Skager-Rak on the north, and the Cattegat and Baltic Sea on the east. It begins at the river Eider and terminates in the narrow sand spit called Shagen or the Skaw (Map: Denmark, C 2). It is divided into south Jutland or Schleswig, now a part of Prussia, and north Jutland, to which the name of Jutland is particularly applied, and which forms the continental portion of Denmark. North Jutland has a maximum extension from north to south of 186 miles and from east to west of 105 miles. It has an area of 9998 square miles and had in 1911 a population of 1,198,457. The surface is generally low, the highest point, which is also the highest in Denmark, being 564 feet above sea level. It is part of a ridge of hills running along the centre of the peninsula from south to north. The west coast is a continuous sandy beach, behind which are a few low lagoons and outside of which are dangerous bars. The landscape among these dunes and heaths is dreary and monotonous, and the temperament of the people is dull and melancholic. During the last few decades, however, forests have been planted east of the dunes, so that now 6 per cent of the country is tree-covered, and the heath lands are thus slowly being reclaimed for agriculture. There are many bays and fiords on the east coast, and the peninsula is traversed by numerous streams. Cattle raising and dairying are the chief occupations of the people, and oats, barley, beetroot, and rye are raised in considerable quantities. There is a railway line running through the whole length of the peninsula, with a number of east and west branches. It is connected with the Schleswig railway system. Jutland is said to have been inhabited in the earliest times by the Cimbric (q.v.) and was known to the ancients as the Cimbric Peninsula, or Chersonesus. See JUTES.

JUTURNA, FOUNTAIN OF. A celebrated spring at the foot of the Palatine Hill at Rome, named after a nymph of the water, beloved by Jupiter. It has been held that the name was originally *Diuturna* (The Lasting Goddess), or goddess of the perennial spring. The spring lies south of the temple of Castor and Pollux. (See CASTOR AND POLLUX, TEMPLE OF.) At this

spring, in 496 B.C., Castor and Pollux appeared to announce the victory of the Romans over the Latins in the battle of Lake Regillus. (Consult Macaulay, *Lays of Ancient Rome*.) For an account of the remains of the spring, discovered in 1901, consult Hülsen-Carter, *The Roman Forum* (Rome, 1906). Juturna had a shrine also in the Campus Martius, where she was worshiped with the Nymphs. The worship of Juturna was early transferred to Rome from a spring of the river Numicius, near Lavinium. Vergil (*Æneid*, xii) writes of a nymph Juturna, sister of Turnus (q.v.). The springs are now covered by debris, but still flow and discharge into the Cloaca Maxima. Consult Wissowa, *Religion und Kultus der Römer* (2d ed., Munich, 1912).

JUVARA, yoo-vä'rá, FILIPPO (1685-1735). An Italian architect, born at Messina, a pupil of Carlo Fontana. At Turin he built the church of the Superga, the Palazzo Madonna, and other works. The cupola of Alberti's church of San Andrea at Mantua is by Juvara. He died at Madrid, where he built the Royal Palace (1734) for Philip V. His dry but refined style marks a reaction from the extravagances of the baroque. See BAROCCO.

JUVENAL (DECIMUS JUNIUS JUVENALIS). A Roman satirist, born at the Volscian town of Aquinum. The year of his birth is unknown, but it may be taken for granted that he was a boy in the reign of Nero (54-68 A.D.); that he was come to man's estate and was practicing declamation in the time of Domitian (81-96 A.D.); and that he lived almost or entirely through the reign of Hadrian (117-138 A.D.). He seems to have enjoyed a competence. He practiced at Rome as an advocate, and there are some reasons for supposing that he visited Egypt. Among his friends were Martial and Statius and perhaps Quintilian. Little is known of his personal history. An inscription has been found at Aquinum, his birthplace, which mentions a Junius Juvenalis as an ex-tribune in the army and a chief officer of the town, but it is not certain whether this refers to Juvenal himself or to a near relative. His fame rests on his 16 satires, still surviving, which occupy the very first rank in satirical literature and are of the greatest value as pictures of the Roman life of the Empire. They were in large part, however, written long before they were published. Juvenal and Horace respectively represent the two schools into which satire has always been divided, and from one or other of them every classical satirist of modern Europe derives his descent. As Horace is the satirist of ridicule, so Juvenal is the satirist of indignation. Juvenal is not a man of the world so much as a reformer, and he plays in Roman literature a part corresponding to that of the prophets under the Jewish dispensation. He uses satire not as a branch of comedy, which it was to Horace, but as an engine for attacking the brutalities of tyranny, the corruptions of life and taste, the crimes, the follies, and the frenzies of a degenerate state of society. He has great humor of a scornful, austere, but singularly pungent kind and many noble flashes of high moral poetry. The old Roman genius—as distinct from the more cosmopolitan kind of talent formed by Greek culture—is distinctly discernible in Juvenal. He is as national as the English Hogarth, who perhaps gives a better image of his kind and character of faculty than

any other English humorist or moralist. Juvenal has been better translated in English literature than almost any other of the ancients. Dryden translated five of his satires. Dr. Johnson paraphrased two of the most famous (the third and the tenth) in his *London* and *Vanity of Human Wishes*, and the version of the whole of them by Gifford (1802) is full of power and character. A fine edition of the *Satires* with an exhaustive commentary is that of J. E. B. Mayor (2 vols., London, 1889). For the text alone, see the edition of Jahn (4th ed., Leipzig, Teubner, 1910). The best working editions with English notes are those of Lewis, with a good prose translation (London, 1882), Pearson and Strong (Oxford, 1892), Duff (Cambridge, 1898), and Wilson (New York, 1903). An admirable German edition is that by Friedlander (Leipzig, 1895); the Introduction deals carefully with the chronology of Juvenal's *Satires* and with his merits as a writer. For the life of Juvenal and criticism of his works, consult the Introduction to the editions by Duff and Wilson; Ribbeck, *Der echte und der unechte Juvenal* (Berlin, 1865); Martha, *Les moralistes romains* (Paris, 1865); Durr, *Das Leben Juvenals* (Ulm, 1888); Nettleship, *Lectures and Essays* (2d series, Oxford, 1895); Boissier, *La religion romaine*, vol. II (Paris, 1874); id., *L'Opposition sous les Césars* (ib., 1892); Butler, *Post-Augustan Poetry* (Oxford, 1909).

JUVENALIA (Lat. neut. pl. of *juvenalis*, youthful). Private scenic games, established at Rome by Nero in 59 A.D. to celebrate his reaching the manly age. The actors were distinguished amateurs, and Nero himself appeared unmasked as an actor. Under the later emperors the games held at the beginning of the year at the Palatine were also called Juvenalia. Consult Smith, *A Dictionary of Greek and Roman Antiquities*, vol. I (3d ed., London, 1890), and Furneaux's note on Tacitus, in *Annals*, vol. II (Oxford, 1891).

JUVEN'CUS, GAIUS VETTIUS AQUILINUS, or AQUILIUS (c.290-c.331). An early Christian poet, probably a Spaniard by birth, of good family, and a Spanish presbyter. His only extant authentic writing is the *Historia Evangelica Versus de Quattuor Evangelicis*, written in hexameters, about 330. The version follows chiefly Matthew and seems to have been made from the Itala (q.v.) for the greater part, though there are occasional signs of the use of the Greek original. The style is pure and the prosody almost classic. Vergil, Ovid, Lucan, and Lucretius are imitated. The best edition is Marold's (1886). The poems *De Laudibus Domini* and *Trumphus Christi* are certainly not by this Juvenicus, and the *Liber in Genesim* is of more than doubtful authenticity. Consult: Manitius, *Geschichte der christlich-lateinischen Poesie* (Stuttgart, 1891); Hatfield, *A Study of Juvenicus* (1890); Teuffel, *Geschichte der römischen Literatur*, vol. III, § 403 (6th ed., Leipzig, 1913).

JUVENILE COURT. For more than half a century the subject of juvenile delinquency has been a theme of solemn comment by criminologists, philanthropists, prison reformers, and others. Elaborate reports have been presented to legislatures and parliaments. It has also been the subject of frequent addresses at prison conferences throughout Europe and America. The result of all this discussion gradually led to some changes in the law and the attitude of

the authorities in dealing with juvenile offenders. These changes represent the inception of what is now known as the Juvenile Court movement. The credit for its beginnings belongs to no state or individual. It is a growth. It is a necessity occasioned by new conditions of civilization, especially by the growth of great cities. These great congestions of population furnished an unhealthy and unnatural environment for children.

The first item of statutory law brought to bear on the subject is probation. It is the foundation principle of the Juvenile Court and counts for more than all of its other items combined. The credit for its first application must be assigned to Massachusetts. The first law—passed in 1869—required the Governor to appoint a visiting agent, to work not for the child's punishment but for his salvation and redemption. For example, before the child could be committed to any jail or institution, notice had to be given to the visiting agent. He was required to attend at the hearing. His functions and duties were those of a probation officer. Under this act the important part of all that is now done in juvenile courts could have been done and in many cases was done.

The next important item of law was that forbidding the placing of children in jails with older criminals. Particularly between 1830 and 1850 do the reviews and prison reform reports of England, and especially those of some of the New England States, teem with accounts of shocking depravity to which young boys and girls were subjected by indiscriminate confinement in jails with older criminals. During the half century preceding what became more definitely known as the Juvenile Court, a number of States passed laws forbidding the temporary or permanent incarceration of children in the same prison with adults.

The next item of law was the separate trial of juveniles from adults. The purpose was to keep the child as far removed as practicable from the experiences and influences applicable to older criminals. Several States had adopted such laws before the advent of the Juvenile Court proper.

The next important item of law was that permitting an offending child under 16 years of age to be dealt with by what is technically understood as a chancery rather than a common-law criminal-court proceeding. This chancery-court proceeding regarded the child as a ward of the State to be corrected and redeemed rather than merely punished and degraded. A child whose technical offense was burglary or larceny, e.g., was not charged with this crime at all. There was no conviction or stigma attached to him on account of the proceeding, as was the case formerly when the proceeding was conducted in a criminal court. He was brought into court as a ward of the State to be corrected. He was referred to as a delinquent child, as distinguished from a dependent child. His delinquency consisted in the act that under the criminal proceeding might constitute a charge and result in conviction of larceny or burglary. His delinquency might be a condition for which the child was not to blame, as well as an act for which he was to blame. This procedure was not entirely new. Some of the English chancellors had pointed out, more than a century ago, that the state, in its capacity as *parens patriæ* (the overparent), had the right

to deal with its children either as wards to be saved or as criminals to be punished and driven out of society into the confinement of prisons.

This is one of the two or three most recent items added to this system. A number of States have claimed the credit for its first application. The question of credit is still unsettled. Some philanthropists have attributed it to the State of Illinois on the ground of an Act called the Juvenile Court Act, that became effective in June, 1899, and, though applying to the State, was very little recognized outside of the city of Chicago until several years later, when the law was, as a matter of fact, being popularized through agitation and publicity from other sources as well as from Chicago. An examination of the law, however, will show that it is mostly a compilation of the ideas of others that had become embodied in the statutes of other States long before they were ever embraced in or applied through this particular statute; as, e.g., probation, providing separate trials for children, forbidding their incarceration in jails, etc., as provided in laws theretofore existing in other States before they were thus enacted in Illinois. The Juvenile Court Act of June, 1899, in Illinois, among other things provided that the Circuit Court—a court already established—could, in the trial of juveniles, for convenience be designated as the Juvenile Court. No new court was created. Neither was the act of such a character that the same court or the same judge could try adults for contributory delinquency or major offenses against children. There was no contributory delinquent law. The court had no power to enforce its decrees against parents or others who often contributed to or were responsible for the offenses of children. This was a handicap under which that court long labored. Cases against the violators of laws for the protection of children still continued to take the long, tedious course through the district attorney's office, the grand jury, and the criminal division of the Circuit Court, as much divorced from any procedure or connection with the Juvenile Court as separate courts could be.

In the same year (1899) an Act approved April 12 in the State of Colorado permitted the county courts acting as courts of chancery—to proceed against and correct any child between the ages of 8 and 16 years and prescribed that any child "who is incorrigible, vicious, or immoral in conduct, or who habitually wanders about the streets and public places during school hours, having no business or lawful occupation, shall be deemed a juvenile disorderly person" (i.e., a juvenile delinquent person) "and be subject to the provisions of this act." This was the beginning of the elaborate system of laws under which the Juvenile Court of Denver was established.

The act was just as effective as that of the State of Illinois in permitting the filing of petitions or complaints and placing the child on probation. Neither act at the time made suitable provision for paid probation officers. This and other details not covered by these early acts were eventually adopted—many of them in the State of Colorado before they came to the State of Illinois. Both acts were crude, as all such laws are likely to be in their beginnings. They have since been amended and reamended; and many additional acts have been added since

1899, not only in Illinois and Colorado but in other States.

Next in order in the items of law is what is known as the Contributory Delinquent Law. This law was first enacted in the State of Colorado in March, 1903. It has since spread to the State of Illinois and many other States of the Union. Briefly, it provided that any parent, guardian, or other person who caused, encouraged, or contributed to the delinquency of a child should be guilty of a misdemeanor and subject to punishment by a fine and imprisonment. This act, when properly used, may be said to be the keystone in this great structure of laws. It was the first comprehensive law ever passed that was designed to hold to strict accountability not only the parent, but all other persons who by conduct or example might offend against a child or encourage it to do evil. The law was bitterly fought by certain vice elements and eventually had to be amended (in 1907) to sustain the rulings of all the lower courts in applying it to *all* persons as well as parents. But notwithstanding these attacks it has been completely effective in Colorado as a law to all persons since it was passed in 1903. There are many other detailed items of law being added to the system known as the Juvenile Court. Some of them were enacted in different States before and after the laws of 1899 in Illinois and Colorado were passed. But those mentioned are the most important. They are responsible, as to the law, for the biggest impetus in later years given a movement that has been growing towards its present status for more than half a century.

Less reference has been made in this article to the dependent child. It has had much less to do with the establishment of the Juvenile Court. Statutes concerning the protection of neglected, orphan, or dependent children existed in many States long before there was a so-called Juvenile Court in any State. But the definition of dependency has been so enlarged by the statutes in many States since the advent of the Juvenile Court that in many cases a proceeding for delinquency may be just as appropriate as a proceeding for dependency. This is primarily because the legal status of the delinquent child is very near akin to that of the dependent child. The child in both cases is regarded as a ward of the State.

By these laws the State does not mean that a child under the age fixed for delinquency does not or cannot commit a crime. Such an attitude would be absurd. It is repudiated by the State in its reservation of the right to prosecute for crime. It simply means that for very good reasons the State takes a different attitude towards the offender and provides a different method of procedure for a different purpose.

The Juvenile Court acts proper in most of the other States generally follow the laws of Illinois and Colorado. They define delinquency and dependency. This covers almost every conceivable form of conduct that should invoke the interposition of the State for the protection of the child or for the exaction of greater responsibility from parents, or others. A petition is filed, calling the court's attention to the conduct, condition, or environment of the child. Or, as under the Colorado laws, the petition may be originally filed against the parent responsible for the child, without any case against the child whatever, as is frequently done. In either case

a summons is issued to the parent or person having custody of the child, requiring him to appear before the court. The court proceeds to dispose of the case in a summary manner. Pending its final disposition, the child may be retained by the person having its custody or kept in some suitable place generally a detention home school provided by the authorities. The court is authorized to appoint probation officers, who shall be present at the proceeding, prepared to look after the child, generally in the home of the parent. But this depends upon the disposition of the case. The officer makes investigations and reports in the interest of the child when the case is heard, furnishing such information and assistance as the court may require, after the trial the probation officer takes charge of the child, as may be directed by the court. If the child is found to be neglected, dependent, or delinquent, the court may permit it to remain in its own home, subject to the visitation of a probation officer. If the court finds that the parent or guardian is unfit to care for it and it is for the best interest of the child, the court may appoint some reputable citizen or guardian to look after the child, or place it in a family home, or commit it to an institution or school generally provided by the State for that purpose. The State always retains its right to prosecute for crime, even in the case of the child, and the court may in its discretion permit such child to be proceeded against according to the laws governing the commission of crimes. But this is seldom, if ever, done. Most of the Juvenile Court laws apply to children under 16 years of age, but in recent years the age limit is being raised to 18 years in the case of both boys and girls.

So far very few of the States have provided separate juvenile courts. Most of them designate some regularly established court to try the cases of children and, as in Illinois, provide that for convenience such court may be called the Children's Court, or Juvenile Court. Colorado provided the first and most comprehensive separate court, in 1907, for all cities of over 100,000 population. It was at the time of its formation, from the standpoint of jurisdiction and all the varied phases of juvenile offenses and those contributing thereto, the most complete Juvenile Court of its kind in the world, and, so far as is known, indeed the first so constituted. This court was given absolute and unlimited chancery jurisdiction and as a court of equity could deal with every phase of the case concerning the child, the parent, and any other person offending against the child. It was also given complete and unlimited common-law criminal-court jurisdiction to try all persons who violated laws for the protection of children. That is to say, if a man committed murder, and the victim was a child—under 16 if a boy, and under 18 if a girl—the case of murder could be tried in the Juvenile Court. The jurisdiction is co-ordinate with the other courts because under the constitution it could not be given exclusive jurisdiction, but by coöperation with the other officers, almost all these cases are now tried in the Juvenile Court, where they are heard much more expeditiously and with more satisfactory results. In the sex cases alone the increase in efficiency and in detections, convictions, and punishments is from 100 to 300 per cent over the trial of such cases in the criminal court, as formerly in Denver and now in other cities.

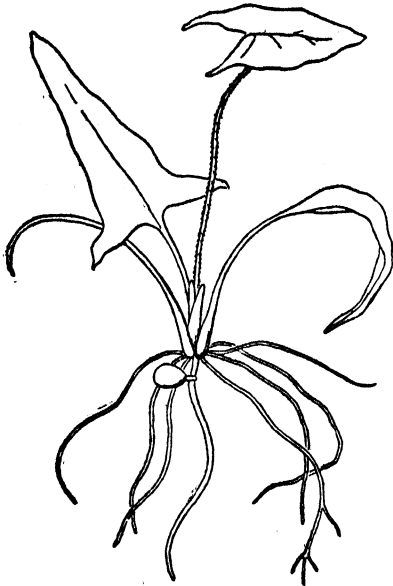
This special court also has jurisdiction of what are known as adult delinquents, i.e., youths between 16 and 21. A somewhat similar court has been recently established in Buffalo, New York. Other States like Indiana, for large cities like Indianapolis, have a separate court that when established was just for the trial of children. There is a disposition in these States to enlarge the jurisdiction of such courts in line with that of the Juvenile Court of Denver. But the kind of court depends a great deal upon the particular city and State, with regard to its constitution and its law and the somewhat different aspects of the same problem. The structure has yet to be completed.

But what is far more important than the structure of the court is the spirit in which it is conducted. Juvenile Court laws only legalize and enhance the opportunity to do certain work for the childhood of the nation that formerly was done by haphazard and without anything like the present effectiveness. It follows, then, that nine-tenths of a Juvenile Court is its judge and its officers. They must be in entire sympathy with its purposes. Without that spirit, properly directed, all of these laws or working tools are of little value. One of the greatest contributions to what is known as the Juvenile Court has been the great amount of work that has been done in the last decade in popularizing its spirit and making it among the people, and making it go round the world. Within recent years juvenile courts in some form, closely modeled after those in America, have been established in England, France, Scandinavia, Russia, Germany, and Japan. Indeed, there is hardly a civilized country in which at least the spirit of the movement has not manifested itself. It is a spirit that had been gathering, as shown, during the greater part of a century, but in the last decade, especially with the impetus of the work in Chicago and in Denver, has traveled with more rapid and far-reaching effect than in all the previous years. Its contribution to the general cause of prison reform for adults has also been incalculable.

Bibliography. Homer Folks, "Children's Courts," in his *Care of Destitute, Neglected, and Delinquent Children* (New York, 1902); S. J. Barrows, *Children's Courts in the United States: Their Origin, Development, and Results* (Washington, 1904); S. K. Hornbeck, *Juvenile Courts* (Madison, Wis., 1908); H. H. Hart (ed.), *Juvenile Court Laws in the United States* (New York, 1910); id., "Preventive Treatment of Neglected Children," in C. R. Henderson, *Correction and Prevention*, vol. iv (ib., 1910); Breckinridge and Abbott, *Delinquent Children and the Home* (ib., 1912); Flexner and Baldwin, *Juvenile Courts and Probation* (ib., 1914).

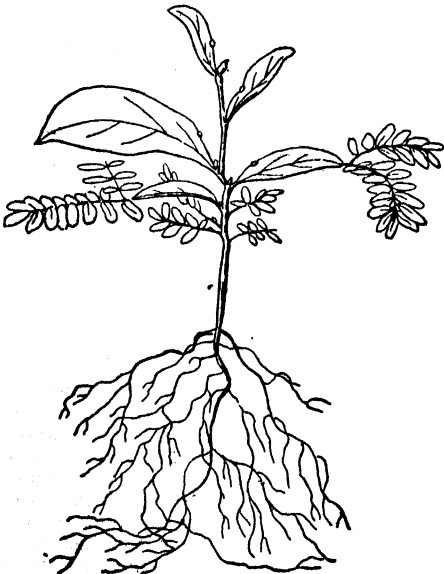
JUVENILE FORMS. Plants which exhibit forms in early youth supposed to be similar to adult forms in the plant's ancestry. For example, the leaves which follow the cotyledons in many plants, such as the barberry, the locust, and the acacia, are radically different from the leaves which appear later, and it is believed by many that they represent a phylogenetically early type of leaf. Recent experiments have made it very likely that the round basal leaves of *Campanula* are juvenile leaves, and it has been shown that various stimuli are able to cause their production at any time in the plant's life history. (See LEAF.) Juvenile forms are very conspicuous among the conifers. For ex-

ample, in mature pines the needle leaves appear only upon the spur shoots, while in seedlings they occur upon the long shoots. It is among



SEEDLING PLANT OF VICTORIA REGIA.
Showing juvenile leaves.

the cypress forms, however, that the juvenile forms are most notable, and a great amount of work has been done in fixing these forms so that they may remain in adult life. These relatively permanent juvenile forms of cypress-like trees have been known in cultivation for a long time



SEEDLING PLANT OF ACACIA.
Showing juvenile (and supposedly ancestral) basal leaves.
The leaflike structures above are stems (phylloides).

as species of *Retinospora*. For example, many of the junipers (often wrongly called cedars) show at adult life the characteristic small scale-

like leaves, but in the juvenile stage they develop spreading needle leaves. It is possible to retain this habit of spreading needles in the adult life of a plant. From what is known of the history of gymnosperms, it seems clear that the juvenile stages represent the adult condition of the ancestral forms.

JUVENILE OFFENDERS. Violators of the criminal code who have not yet reached the age of full responsibility. The assumption underlying most penal codes is that responsibility develops gradually. Children below a certain age—10 years in some countries, as in England, 12 years in Germany—are not held accountable for criminal acts, nor subject to punishment by the state. Of children above this minimum age and under a maximum age (16 in most American States, but in some 18; 18 in Germany), only those are subject to punishment who are able to understand the nature and consequences of their acts. Whether such understanding is present or not is a subject for the court to determine in the particular case. Further, there is a tendency in most modern states to discard the principle of punishment altogether in the case of juvenile offenders and to substitute therefor the principle of reformation. Hence the most enlightened practice requires their detention in institutions separate from those designed for the punishment of adult malefactors; separate courts, proceeding upon special rules (see JUVENILE COURT); and the employment of incarceration in institutions only when reformation under a probation system appears improbable. Such enlightened practice is, however, far from general use in any country.

According to the United States Census of 1910, there were, on Jan. 1 of that year, 24,974 juvenile offenders in reformatories as compared with 111,498 prisoners assumed to be of full responsibility. Of the juvenile offenders, 19,062 were males, 5912 females; 21,044 were white, of whom 19,368 were native born; 3855 were negro, and 75 of other colored races. The offenses for which juvenile offenders were convicted included 14 cases of grave homicide, 45 cases of lesser homicide, 321 major assaults, 208 robberies, 2039 burglaries, 6420 larcenies, and 1285 sexual offenses. In 12,958, or over one-half, of the cases the census returns do not specify the character of the offense. The sentences imposed in 16,839 cases were for the period of minority; in 6404 cases, for an indeterminate period.

It is generally believed that juvenile crime is on the increase in most modern states, but the statistics of such crime are so defective, and the classification of offenders undergoing such rapid change, that it is difficult to establish scientifically the tendencies operative in this field. On the basis of the excellent criminal statistics of the German Empire, Dr. Aschaffenburg has compiled the following table:

CONVICTIONS ANNUALLY PER 100,000

	Adults	Minors
1882-86.....	1097	564
1887-91.....	1120	618
1892-96.....	1281	707
1897-1901.....	1298	733
1902-06.....	1321	736

From this table it appears that while crime among adults increased 20.4 per cent relatively to the adult population, crime among minors increased 30.5 per cent.

The German statistics agree with the American in making thefts and larcenies the principal crimes of minors. Petit larceny was the ground of conviction in 297 per 100,000 minors in the population in 1882, and 311 in 1906. Aggravated assault and battery increased in the same period from 48 to 107.

The following table for the German Empire in 1901 indicates the frequency of various offenses at different ages.

OFFENSES PER 100,000 PERSONS

OFFENSES	12-14 years	14-18 years	18 years and over
All crimes and offenses	405.2	919.1	1361.7
Petit larceny	230.4	329.4	208.4
Grand larceny	47.8	65.0	28.2
Receiving stolen goods	14.7	19.7	19.7
Fraud	9.7	41.3	70.6
Simple assault and battery	3.7	25.1	79.1
Aggravated assault and battery	24.9	167.2	274.5
Malicious mischief	30.2	57.2	48.3
Insult	2.6	29.2	165.5
Arson	2.1	2.6	6.9

The table indicates that a larger proportion of children 14 to 18 years of age are guilty of petit and grand larceny, of malicious mischief, and of arson than of the adult population.

The causes of the probable increase in juvenile offenses are complex. The factor of chief importance appears to be the increasing concentration of population in the cities, where poverty is more severe and parental control is less adequate than in country districts. Intensive investigations in various modern cities have shown a close relation between juvenile crime and abnormal parental conditions. Thus Misses Beckinridge and Abbott found that of 14,183 delinquent children brought to court in Chicago between July 1, 1899, and June 30, 1909, 4841, or 34.1 per cent, came from families that were abnormal, i.e., with one parent or both dead or parents separated or divorced, etc. The same investigators made a careful inquiry into the economic condition of the families from which came 584 delinquent boys and 157 delinquent girls. It was found that 38.2 per cent of the boys and 68.8 per cent of the girls came from families that were in extreme poverty, an additional 37.9 per cent of the boys and 21 per cent of the girls came from homes that were normally self-sufficing, though poor. Although comprehensive investigations of the relation between poverty and juvenile delinquency have not been made, it may safely be said that poverty is a chief cause in at least three-fourths of the cases of juvenile delinquency.

A further cause of delinquency, not yet adequately investigated, is congenital mental or moral defect. The application of the Binet test (see MENTAL TESTS) to inmates of reforma-

tories and to children brought before the courts has shown that a considerable proportion, not classifiable as mental defectives according to methods formerly employed, should none the less be classed as such. For such offenders it would appear that existing reformatory methods are inadequate.

Bibliography. Morrison, *Juvenile Offenders* (New York, 1897); Henderson, *Dependants, Defectives, Delinquents* (Boston, 1901); Folks, *Care of Destitute, Neglected, and Defective Children* (New York, 1901); Joly, *L'Enfance coupable* (Paris, 1904); Henderson, *Modern Methods in Charity* (New York, 1904); Baernreither, *Jugendfürsorge und Strafrecht* (Leipzig, 1905); Binet, J. and Abbott, *The Delinquent Child and the Home* (New York, 1912); Aschaffenburg, *Crime and its Repression* (Boston, 1913); Bureau of the Census, *Prisoners and Juvenile Delinquents* (Washington, 1914). See CRIME, DEGENERACY; JUVENILE COURT; REFORMATORIES, PENOLOGY.


JUVENILE REFORMATION. See JUVENILE OFFENDERS, PENOLOGY; JUVENILE COURT.

JUVENTAS (Lat., youth). In Roman mythology, the goddess of young men, whose shrine was in the cella of Minerva in the temple of Jupiter, on the Capitol. When a Roman youth became of age, he brought an offering to Jupiter on the Capitol and paid a small tax to Juventas. Later (c.218 B.C.) the Greek Hebe was introduced to Rome under this name, and it was to her that the temple of Juventas, near the Circus Maximus, was dedicated (191 B.C.). When she was identified with Hebe, her worship became closely associated with that of Hercules, who had married Hebe. Consult Wissowa, *Religion und Kultus der Römer* (2d ed., Munich, 1912).

JUVERNA. See HIBERNIA.

JUXON, WILLIAM (1582-1663). An Archbishop of Canterbury and Lord High Treasurer of England. He was born at Chichester, graduated at St. John's College, Oxford, in 1603, and was appointed vicar of St. Giles's, Oxford, in 1609, and rector of Somerton in 1615. In 1621 he became president of St. John's College and in 1626 vice chancellor. In 1627 he was made dean of Worcester, in 1632 Bishop of Hereford, in 1633 Bishop of London, and in 1635 Lord High Treasurer. He was patronized by Archbishop Laud, in whose views and policies he generally shared without loss of popularity. In the Civil War he adhered to Charles I and was his constant and valued adviser. He attended the King at his trial and execution, was deprived of his bishopric after the death of Charles, and was imprisoned for refusing to reveal what the King had intrusted to him. After the Restoration in 1660 he was made Archbishop of Canterbury. Juxon was prominent in the restoration of St. Paul's. Consult Marsh, *Memoirs of Archbishop Juxon and his Times* (Oxford, 1869).

K

K The eleventh letter in the English alphabet. Its form is derived from the Phœnician  and the early Greek K, from which latter there has been little variation.

It was called in Phœnician *kaph*, from a supposed resemblance to the hollow of a hand. This name came into Greek as *kappa*. K was very little used in Latin, its place being supplied by C (q.v.), which had the same sound as K. Accordingly, in the languages derived from Latin *c* was used to represent the hard *k*-sound, but in those languages which came under Greek influence the *k* was retained. See under C.

Phonetic Character. English *k* is a voiceless half-guttural explosive made by a closure part way between the back of the tongue and the roof of the mouth, or between the hard and soft palate, tending rather towards the front than the back of the mouth in present English pronunciation. Its sound is to a great extent expressed in modern English spelling by *c*, and frequently also by *ck*, *ch*, *q*. At present *k* is silent initially before *n*, as *knight*, *knock*. As to origin, initial English *k* comes from loan words from the Greek or other non-Latin sources, as *kinetic*, *khedive*, *kangaroo*. After the Norman Conquest the phonetic value of *c* was uncertain, as the Norman element brought in the *s*-sound of *c*. This gave rise to the use of *k* for the hard sound of *c*, particularly before *e* and *i*, where the value of *c* was the least settled. Owing to historical survivals, *k* is frequently found also in words of Scandinavian, Dutch, or Northern English origin, as *keg*, *kult*, *kirke*, *kipper*.

As a Symbol. In chemistry K = *potassium* (*kalium*). K stands for *knight*; K.B., Knight of the Bath, K.G., Knight of the Garter.

K 2. A symbol sometimes applied to Mount Godwin-Austen (q.v.).

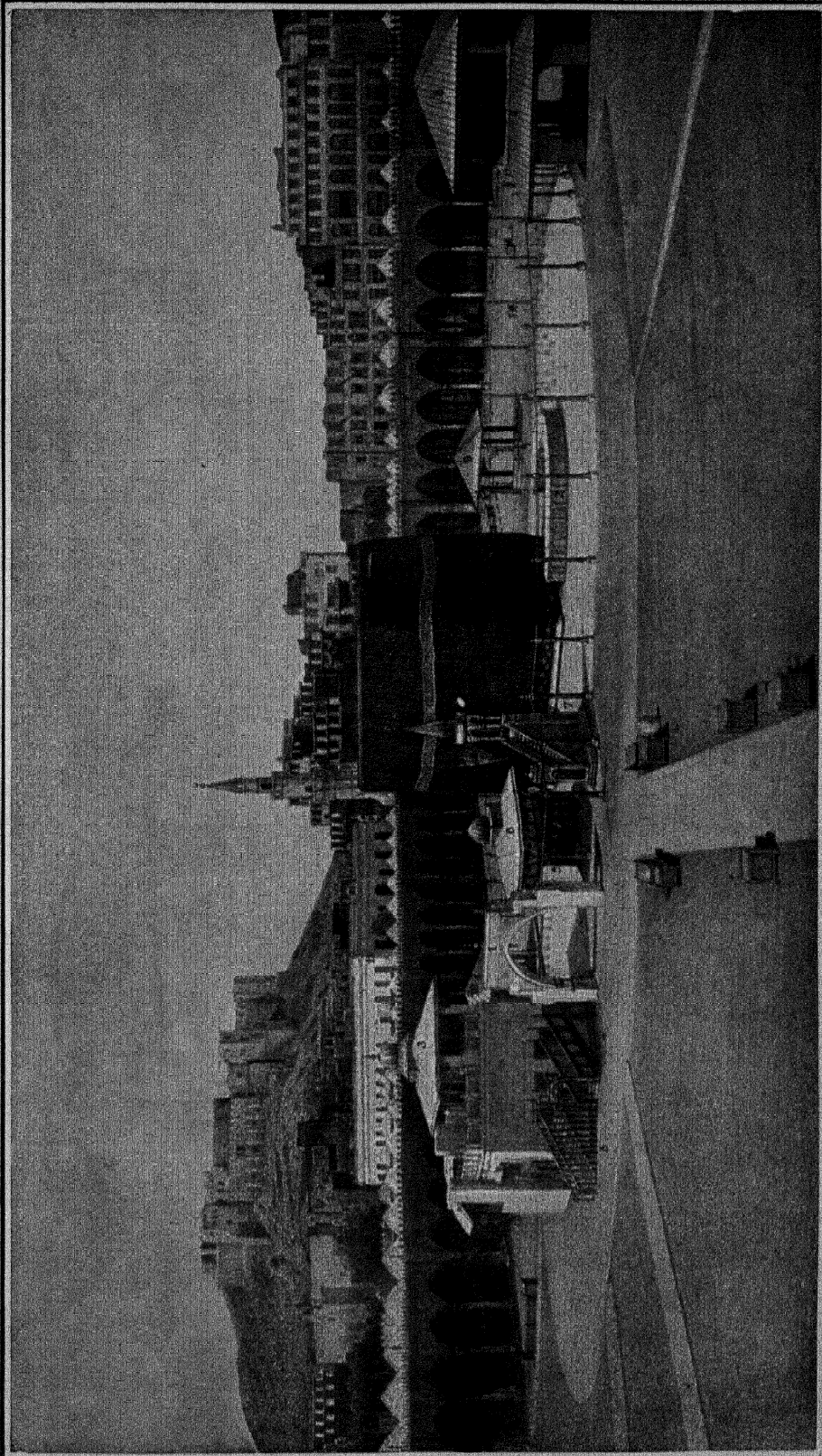
KA, kâ. According to the common belief of the ancient Egyptians every man, king, and god possessed after death a *ka*, or genius, a sort of second self, the centre of individual life in the world beyond. Hence "to go to one's *ka*" or "to join one's *ka*" was synonymous with "to die." This *ka* animates the statue of the deceased and receives mortuary offerings. Every king was thought to possess a *ka* on earth by virtue of his divine nature, this *ka* being represented as present with him from his conception and as his protecting spirit or guardian angel. In rare cases it appears that this special privilege was extended to other human beings while

still in this life, an apotheosis being probably the cause. The expression "to go with one's *ka*" seems to have been used only concerning the King. In all cases the *ka* existed during the man's lifetime, but in the spirit world, and not as a part of his personality in this life, the term for the spiritual part of his being, the soul, was *ba*. It is this *ba* that flies away like a bird man at death. There is no other word for "soul" than *ba* in Egyptian. The plural of *ka* seems to be used to designate "vital forces." As to the meaning of the symbol representing *ka*, the two uplifted arms, it may signify protection, or blessing.

Bibliography. Steindorff, "Der Ka und die Grabstatuen," in *Zeitschrift für ägyptische Sprache*, vol. xlviii (Leipzig, 1911), Bissing, in *Königlich bayerische Akademie, Sitzungsberichte* (Munich, 1911), Erman, in *Königlich preussische Akademie, Sitzungsberichte* (Berlin, 1911), J. H. Breasted, *Development of Religion and Thought in Ancient Egypt* (New York, 1912); Gaston Maspero, in *Memnon*, vol. vi (Stuttgart 1912). Moret, in *Revue de l'histoire des religions* (Paris, 1913), Sottas, in *Sphinx*, vol. xvii (Leipzig, 1913).

KAABA, kâ'ba (Ar. *ka'bah*, square house or chamber). The cube-shaped stone building in the centre of the mosque of Mecca, dating from pre-Islamic times and taken over by Mohammed into the new faith. It seems probable that the name originally *ka'ba*, the square stele representing the god Hubal, who was worshiped there. According to Epiphanius, the name of the virgin mother of the god Dusares at Petra was *Xaßov*, and at Tabala in Yemen the name originally designated the white flint stone with a crown sculptured on it which gave its name to the sanctuary (Yemenite Kaaba). The Kaaba has the shape of an irregular cube about 40 feet long, 33 feet wide, and 50 feet high. Its corners are oriented. In the northeast corner, about 5 feet from the ground, is set the famous Black Stone which gives the Kaaba its sanctity. The stone, probably of meteoric origin, is an irregular oval about 7 inches in diameter, composed of a number of broken pieces kept together by cement. It is held in extreme veneration by Mohammedans and is touched and kissed by them in the seven circuits made around the building during the ceremonies connected with the Hajj (q.v.). In the southeast corner a stone of lighter color is also set, but this is not venerated as is the Black Stone. Not far from the latter, 6 or 7 feet above the ground, in the north side of the

THE KAABA AND HARAM



1. THE GATE OF THE BENI SHAIBAH

4 and 5. STAIRWAYS TO THE KAABA

8. MAKAM AL-HANAFI

building, is the only entrance to the Kaaba, which is reached by movable staircases, one for men and the other for women. The present very ornate ones were the gift of a pious Indian Moslem. This door is opened three times a year—once for men, a second time for women, and a third time to permit the inside to be cleaned. On the northwest side is a semicircular space surrounded by a wall, called *al-Hijr* or *al-Hatim*. Inside the Kaaba there was originally a dry well, above which was the square statue of the god. There is also said to have been a dove made of aloewood. To judge from the account of the Persian traveler Nasiri Khusra in 1035, the interior was once highly ornamented with gold, silver, and costly marbles. There remain to-day the beautiful pavement of massive marble, the Arabic inscriptions which run along the walls, and the lamps of massive gold suspended from the ceiling. Though changes have been made from time to time, the building is substantially what it was at the time of the Prophet. The flat roof dates from his time. When Mecca was besieged by the Ommiads, fire almost destroyed the building, and it was restored to its original form by Hajjaj. In 1611 the walls threatened to fall in, and a girdle of gilded copper was put around them. In 1630 one of the many floods which from time to time devastate the valley in which the Kaaba stands greatly injured the building, and the whole was rebuilt, but with the original stones. The first caliphs covered the building with costly Egyptian hangings, then with red, yellow, green, or white silk. At the beginning of the ninth century the Caliph was accustomed to send three new coverings a year. Up to 1516 the Sultan of Egypt sent such a . . . when he ascended the throne. Since th . . . rule the cover is made of thick black brocade and is sent every year from Cairo at the same time as the *mahmal*, or covered litter, the emblem of royalty. The cover has a golden legend, made up of extracts from the Koran, embroidered around its whole surface 33 feet from the bottom. A special foundation provides the money for this purpose, and the ceremony of sending it out is connected with much pomp.

The Kaaba stands within a space called the Mosque, or the Haram (Holy Place). This was originally quite small, the houses of the city reaching right up to it. This space was enlarged by successive caliphs; al-Mahdi (775-781) built colonnades around the Haram and roofed them with teakwood ceilings. Minarets were added from time to time, the seventh being (it is said) the gift of the Sultan Ahmet I, who was only on this condition permitted to erect a sixth minaret on his own mosque at Constantinople. The space immediately around the Kaaba was surrounded by posts supporting cords upon which lamps were hung. The mosque was rebuilt by Sultan Selim II (1566-74), who substituted the present pointed cupolas for the teakwood ceilings of the colonnades. This mosque, which is very much more imposing than the simple arrangement at Mohammed's time, is unequal in the length of its sides and the angles of its corners. The floor sinks from east, north, and south to the middle; seven causeways run out from the inner circle of the Kaaba to the colonnades. Part of the space and the flooring of the colonnades are of marble. There is a building containing the sacred well,

Zemzem, the only well in Mecca. Northwest of this and opposite the entrance of the Kaaba is the *Makam Ibrahim*, a holy stone of heathen times, originally kept in the Kaaba, then in a stone receptacle under the Kaaba, and now in a box under the cupola of the building. It is used by the imam (leader in prayer) of the Shafites. Other makams were introduced during the twelfth century. The mimbar (pulpit) was introduced under the Ommiad caliphs; the present one was the gift of Sultan Suleiman II (1549).

Many legends in regard to the origin and history of the Kaaba and the Black Stone are current among the Moslems. Mohammed himself (Koran, sura xxii, 119) connected the building of the first structure with the patriarch Abraham. Other legends refer this building to Adam, who is said to have fashioned it after its prototype in heaven. The Black Stone is said to have been w' ' ' ' ' but to have turned black, either . . . sins of men or the millions of kisses which have been imprinted upon it.

Bibliography. Burckhardt, *Travels in Arabia* (London, 1829); Burton, *Personal Narrative of a Pilgrimage to El-Medīnah and Mecca* (ib., 1855); Wiustenfeld, *Die Chroniken der Stadt Mekka* (Leipzig, 1861); Snouck Hurgronje, *Mekka* (The Hague, 1888-89); Pélérinage à la Mecque et à Médine (Cairo, 1894); Wellhausen, *Skizzen und Vorarbeiten*, vol. iii (2d ed., Berlin, 1897); Grimme, *Mohammed* (Munich, 1904); Huart, *Histoire des Arabes* (Paris, 1912).

KAAB IBN ZUHAIK, kāb ib'n zūh'āir (Ar. Ka'b). An Arabian poet of the seventh century, a contemporary of Mohammed. His father, Zuhair ibn Abi Sulma Rabia al-Muzani, was also a poet and author of some of the seven poems of the Muallakat, the great collection of pre-Islamic Arabic poetry. All the other members of Kaab's family (the Muzainah) became converts to Islam, and when his brother Bujair adopted the new faith, Kaab indited a bitter and sarcastic poem which came to the notice of the Prophet, and Kaab was outlawed. By means of a clever stratagem, however, he gained access to Mohammed and recited a famous eulogy, called, from the first two words, *Banat Su'ad* (Su'ad—a woman's name—fled). Mohammed was pleased and gave the poet his own mantle. Kaab is reported to have died soon after. The two poems referred to are translated by Brockelmann in his (popular) *Geschichte der arabischen Literatur*, pp. 52, 53 (Leipzig, 1901); the second also by Gabrieli, *Al-Budatān* (Florence, 1901). The best editions of the *Banat Su'ad* are those of I. Guidi (Leipzig, 1871-74) and Nöldeke, in his *Delectus Veterum Carminum Arabicorum* (Berlin, 1890).

KAALUND, kā'lund, HANS VILHELM (1818-85). A Danish poet, born at Copenhagen. He studied sculpture and painting, but the enthusiasm with which his verses were received on the return of Thorvaldsen (1838) made him decide to take up literature as a profession. His poems, *Kong Haldan den Starke* (1840) and *Valkyrien Gøndul* (1842), were successful but not profitable, and the same was true of his other works until the publication of *Et Foraar* (1858; 6th ed., 1886), a collection of his best old and new poems. In 1875 his drama *Fulvia* appeared and in 1877 another collection of poetry, *En Efteraar* (4th ed., 1889). A post-

mountains and across the District of Peshawar, empties into the Indus, opposite Attock, in Punjab. The point of confluence marks the point of navigation on the Indus, while the tributary is navigable from Jelalabad down for its or rafts and is considerably used for commerce. By means of the two streams there exists an available communication of about 1000 miles between the Khyber Mountains and the Indian Ocean. The Kabul flows past the cities of Kabul, where it is frequently exhausted in summer for irrigation, and Jelalabad.

KABYLES, *kā-bilz'* (Ar. *qabilat*, pl., *qabā'il*, tribes). The Arabic name for "tribe," "union of tribal huts," commonly applied to the Hamitic tribes, numbering about half a million and inhabiting the table-lands of Algeria. In a narrow sense Kabylia is restricted to a tract in Algeria divided by the Sahel River into Great Kabylia on the west, with the mountains rising 30 feet, and Little Kabylia on the east, with its 3000 feet above the sea. The Kabyles, though in speech Hamitic, strongly resemble North Europeans, being black-haired and brown-skinned, the color of the skin is white, except for the parts exposed to the sun, which are brown. There is, however, a generous sprinkling of blue-eyed blond individuals suggesting Scotchmen or North Germans. This blond element has been long connected with the Vandals, since its presence is vouched for at a much earlier period. Sauer advances the theory that an autochthonous Hamitic population was first ousted by North Europeans from the Iberian Peninsula, who adopted the language of the conquered people and became the ancestors of most of the Kabyles to-day, and that there followed another prehistoric invasion by North Europeans, who assimilated with the Kabyles, but preserved their racial purity. The Kabyles are of medium height (5.677 meters, or 66 inches) and long-headed, with an index of 76.4.

The Kabyles are an agricultural and industrial people. They use the wooden plow and thresh their grain with the tribulum, or harrow with stone teeth. They are good workers in iron, brass, and leather, and the women are skillful in basketry textiles. No machinery of any kind exists among them. Kabyle pottery, all made by women without the use of the wheel. The forms are plates, bottles of plain or quaint designs, teapot forms, pitchers, amoures, etc. The colors are écarle, red, terra cotta, and black. Their ornamentation is made up of an infinite number of patterns, in which dots, straight lines, hachures, and geometrical forms are mingled; but there is no evidence of legendary signs. Fresh interest is awakened in Kabyle pottery by its resemblance to the ware found in prehistoric European sites, and especially on the Greek islands.

The Kabyle village is similar in structure and habits to those of the Pueblo Indians, but of a higher grade. The notion of terrace building, which unites habitation and defense, is prominent. In the more prosperous settlements the houses cover a hill rising so steeply that the lower houses are commanded from above, the upper forming a citadel. The tile roofs, heavy wooden framework, squared walls, added stories, and decorated porches, with some evidences of architectural proportion and ornament, are marks of a higher culture, but structurally the houses are defective. The interior of the Kabyle house (3 × 15 feet) is divided by a partition wall

into two rooms, one of them at a higher level than the other. In the higher room the family eat, live, and sleep. The lower is a stable for domestic animals and is ventilated into the living room. Granaries of burnt clay are built over the stables. The walls are whitewashed, mats serve for beds, and the fire is in a pit, round which are stones to support the cooking pots.

The family is patriarchal, and monogamy is the universal custom. The women and girls go about unveiled and are said to enjoy much greater freedom than their sex among the Arabs. But their life is a hard one, and they are old and wrinkled at 30. The families are organized into 1000 or more septs living in separate villages. The tribes, which form larger units of nations and confederacies, are ruled by Amins, who are commanders in chief in war and civil rulers in peace. They are not despotic, however, since their acts are subject to the revision of a council. Beneath the civil rule is felt the influence of secret societies, which are all-powerful in elections and policies.

The religion is a somewhat modified Mohammedanism. Each village possesses one or more mosques resembling enlarged dwellings, not always adorned with minarets. The imam (q.v.) has care of the religious services and the instruction of the young. He is treated with great respect, consulted in important affairs, and is often the arbitrator in family disputes.

Since the French occupation of Algeria and the existence of good government and demand for labor, the Kabyles are coming down from their seclusion and securing employment on the public works and in the cities.

Consult Hanoteau and Letourneau, *La Kabylie et les coutumes kabyles* (3 vols., Paris, 1893), Randall-MacIver and Wilkin, *Libyan Notes* (London, 1901); Bertholon and Chantre, *Recherches anthropologiques dans la Berbérie orientale* (Lyons, 1913); Lissauer, "The Kabyles of North Africa," in *Annual Report of the Smithsonian Institution* (1911); Van Lennep, *Études d'ethnographie algérienne* (Paris, 1911-12); Stuhlmann, *Ein kulturgeschichtlicher Ausflug in den Aures* (Hamburg, 1912). See LIBYANS.

KACHH, *küch*. An inlet of the Arabian Sea. See CUTCH, GULF OF.

KACHH. A principality of British India. See CUTCH.

KACHH GUNDAVA, *gün-dä'vā*. See CUTCH GUNDAVA.

KACZKOWSKI, *käch-kóf'ské*. ZYGMUNT (1826-96). A Polish writer of historical and social romances, born at Bereznia, Galicia, and educated at the University of Lemberg. With the revolution of 1848 he emerged into public life, and in 1861 the publication of his newspaper *Głos* led to a short imprisonment, followed by a lengthy sojourn in Paris. He afterward returned to Vienna and fully occupied himself with literary pursuits. His numerous novels, marked by charming style and fidelity to history, include *Bitwa o Horonczanken* (1852), *Le tombeau de Neczui* (1858), and *Le portefeuille de Neczui* (1883). They belong to a cycle, the central figure of which is Count Neczui, a personification of the old Polish aristocracy as viewed by the author. Another group of novels, dealing with the events which led to the revolution of 1848, includes *Drzewożona* (The Strange Woman, 1855), *Bajronista* (Byronist,

1855), and *Wnuczena* (Grandsons, 1858), which is considered Kaczkowski's masterpiece. *Annuncyata* (1858), *Sodalis Marianus* (1858), and *Le Comte Rak* are among the best known of his other novels.

KADAPA, or **CUDDAPAH**, kūd'dā-pā. The capital of a district of the same name in Madras, British India, situated near the south bank of the Penner, 161 miles northwest of Madras (Map: India, D 6). The site is low and hot (average summer temperature 100° F). There is trade in cotton, cotton cloth, and indigo. Pop., 1901, 16,432; 1911, 17,807.

KADELBURG, kā'del-burk, GUSTAV (1851-). An Austrian dramatist and actor, born at Budapest. He made his début in Vienna at 17; played at Berlin from 1871 to 1883, with the exception of two seasons; toured in the United States; and from 1884 to 1894 was engaged at the German Theatre in Berlin. Soon afterward he left the stage and became manager of the Volkstheater in Vienna. Later he removed to Berlin. He wrote many comedies and farces, including *Liebesdiplomaten*, *Endlich allein*, *Schutzengel*, and *Im weissen Ross* (with Blumenthal), translated into English as *The White Horse Tavern* and played with great success in New York. He also translated plays from the English. In 1899 appeared *Dramatische Werke von Franz von Schonthan und Gustav Kadelburg* (4 vols.).

KADEN, kā'den, WOLDEMAR (1838-1907). A German folklorist and writer on travel, born in Dresden. He became a teacher, was head of the German School at Naples (1867-73), and was professor of German in the Lyceum and at the Gymnasium of that city (1876-82). He is best known for his descriptions of Italy: *Wandertage in Italien* (1874); *Unter den Olivenbaumen*, folklore from southern Italy (1880); *Skizzen und Kulturbilder aus Italien* (2d ed, 1889); *Pompejanische Novellen* (1882); *Die Riviera* (2d ed., 1891), with Nestel; *Italiensche Gypsfiguren* (1891); *Auf Capri* (1900); and of Switzerland: *Die Gotthardbahn und ihr Gebiet* (3d ed., 1889) and *Durchs Schweizerland* (1895). His further work in folklore includes *Volkstümliches aus Südtalien* (1896-97), *Sagen der Quichua-Indianer* (1895), and *Sagen der Guarani-Indianer* (1895).

KADESH BARNEA. A city where Israel is said to have encamped before entering the promised land (Deut. i. 2, 19, ii. 14, ix 23; Num. xxii. 8, xxxiv. 4, Josh. x. 41, xiv. 6, xv. 3). Hence Moses sent forth the spies, according to Num. xxxii. 8. It is unquestionably identical with the Kadesh where Miriam died and whence Moses sent messengers to the King of Edom, according to Num. xx. 1 ff. The importance of this place has been strongly emphasized by Wellhausen and Eduard Meyer. Kadesh Barnea may have been the centre of the tribe of Levi and its Yahwe cult for some time after the expulsion of the Hyksos from Egypt and the Hebrews from Goshen. Like the brother tribe, Simeon, settled north of it, Levi was probably overthrown by the Jerahmeelites. When these entered into alliance with David and became a part of the Kingdom of Judah, Kadesh Barnea was counted as its southernmost city, the boundary running south of it, evidently along the Wadi el-Kades. It is probably referred to in Judith v. 14, and according to William of Tyre and the *Gesta Dei per Francos* Amalric I went "even to Kadesh Barnea which is in the desert" (c.1167 A.D.).

Ain Kades, already visited by Rowlands in 1842, was identified as Kadesh Barnea by Trumbull in 1881, and his enthusiastic and highly imaginary description led to a general acceptance of the identification. Ain Kades is situated in lat. 30° 37' 30" N. and long. 34° 31' 55" E. Schmidt, however, who visited the place in 1905, thinks that Ain Kuderat, northwest of Ain Kades, is more likely to have been the ancient Kadesh Barnea, as it is the Ain par excellence in this region, an ample stream flows forth from it, and there are near it an impressive tell and ruins of ancient structures. He interprets Kadesh as 'devotee' and understands Barnea as the Amoritic name of a man meaning 'Hadad waves.' Consult: Trumbull, *Kadesh Barnea* (New York, 1881); Lagrange, in *Revue Biblique Internationale* (Paris, 1896); Eduard Meyer, *Die Israeliten und ihre Nachbarstämme* (Halle, 1906); N Schmidt, "Kadesh Barnea," in *Journal of Biblical Literature* (Boston, 1910); Wellhausen, *Israelitische und jüdische Geschichte* (7th ed., Berlin, 1914).

KADI, kā'dā. See CADI.

KADIAK, kā'd-yāk'. See KODIAK.

KADIAK BEAR. See BEAR.

KAD/MONITES (Heb. *Kadmōni*, easterner). A people mentioned in Gen. xv. 19. They are the inhabitants of the land called Kedem, and are themselves described as Bene Kedem, or "children of Kedem." In the story of Sinuhe, which comes from the twelfth dynasty (c 2300 B.C.), the hero flees to Kedem, where he spends a year and a half. It is evidently located east of the Arabah (qv) and the Dead Sea. Numbers xxiii. 7 suggests that the "mountains of Kedem" are synonymous with Edom, as we should undoubtedly read instead of Aram. According to Gen. xxix. 1 Jacob went to the land of the Bene Kedem. Tradition understood this as a journey to the Aramæans, and it is altogether probable that the Kadmonites, living in the Syrian desert and in the mountains of Seir, were Aramæans. Consult Eduard Meyer, *Die Israeliten und ihre Nachbarstämme* (Halle, 1906).

KAEGI, kāg't, ADOLF (1849-). A Swiss philologist, born at Bauma. He was educated at Leipzig and Tübingen. In 1877 he became professor of Sanskrit, and of classical and Indo-Germanic philology in the Gymnasium of Zurich and in 1883 at the university. His writings, besides the historical work, *Kritische Geschichte des spartanischen Staates von 500 bis 431 vor Christo* (1873), and his attempts to simplify the study of Greek in his *Griechische Schulgrammatik* (4th ed, 1895, 9th ed, 1914), and *Griechisches Übungsbuch* (1893-95), are mainly in the field of Sanskrit philology: *Siebenzig Lieder des Rigveda übersetzt* (1875), in collaboration with Geldner and Roth, *Der Rigveda* (2d ed., 1881); *Die Neunzahl bei den Ostariern* (1891). He also wrote *Alter und Herkunft des germanischen Gottesurteils* (1887). His short *Greek Grammar for Schools* reached its twenty-fourth edition in 1914. He prepared also editions 9-11 of Autenrieth's dictionary to Homer (1901-08), and editions 10-13 of Benseler's *Griechisches Schulwörterbuch* (1896-1911).

KAEMPFFER, kēmp'fēr, ENGELBERT (1651-1716). A German traveler. He was born at Lemgo, Westphalia, studied medicine and natural science at Königsberg, and in 1683 visited Persia as secretary to the Swedish Ambassador. While in Persia, he made the first modern sci-

entific excursion to the Baku peninsula. Having received an appointment as surgeon to the Dutch East India Company in its naval service, he accompanied the fleet to the East Indies and Japan. He returned to Europe in 1693 and devoted himself to the preparation of his voluminous notes for a comprehensive history and description of Japan and Siam. His *History of Japan* first appeared in an English translation made from his German manuscript (London, 1727), then in French (The Hague, 1729), next in Dutch (Amsterdam, 1733), and last in German (Lemgo, 1777). A new edition in English was published in 1906. The greater part of his writings is preserved, still in manuscript, in the British Museum.

KĀF, kâf See CĀF

KAFFA, kâf'fa. One of the tributary states of Abyssinia, situated in the southwestern part (Map: Egypt, D 6). Area about 5000 square miles. It is mountainous, with fertile valleys, and is drained by the Omo River. Dense forests cover the hill slopes. Some sections are well cultivated, the coffee plant being indigenous and said to have derived its name from the country. The natives belong to the Galla race and profess a corrupt kind of Christianity. Capital, Anderacha. Kaffa was subjugated to Abyssinia in 1895. Bonga and Jimma are the most important cities.

KAFFA, CAFFA, or **FEODOSIA**. A seaport town and watering resort in the government of Taurida, Russia, on Kaifa Bay, indenting the southeast shore of the Crimean Peninsula, 62 miles east of Simferopol (Map: Russia, E 6). It is the terminus of a branch line to Dankoi, connecting with the Russian railway system. The town, surrounded by vineyards, noted for the quality of their grapes, is fortified by walls and a citadel, has a Russian cathedral, a museum of antiquities housed in a former mosque, and remains of the palace of the former Crimean khans. The most remarkable building in the city is the fortress-like Armenian church built by emigrants from Ani in 1327. There are also Lutheran and Roman Catholic churches and a mosque. It has a commodious and sheltered harbor with ample wharfage, oyster fisheries, and domestic manufactures of carpets, rugs, soap, and caviar. Since 1894 Kaffa has become the chief commercial port of the Crimea. Theodosia or Feodosia was a thriving Milesian colony and the granary of ancient Greece; in the thirteenth century it became a trading port of the Genoese, known as Kaffa. It was captured by the Turks in 1475 and by the Russians in 1774. Pop., 1897, 27,238, 1912, 37,961.

KAFFRĀRIA, kâf-frā'ri-ā. A name given to the part of the Province of the Cape of Good Hope lying east of the Kei River. It was formerly an independent native kingdom of South Africa, was annexed to Cape Colony (see CAPE OF GOOD HOPE) in 1875, and is now incorporated as East Griqualand, Transkei, Pondoland, and Tambuland Area, about 22,000 square miles. Pop., 1911, 834,644. Grain and cattle are raised.

KAFIR (kâf'ir) **BREAD**. A name given to several South African species of *Euphorbia*, of the natural order Cyadaceae, which, like many others of that order, have much starch in their stems and afford food to the natives. They are also called bread trees. See **ZAMIA**.

KAFIR CORN. A variety of nonsaccharine sorghum. See **ANDROPOGON**; **SORGHUM**, *Nonsaccharine*.

KAFIRISTAN, kâf'ir-râ-stân' (Pers., land of the infidels). An eastern province of Afghanistan, south of Badakshan and west of the Chitral, between about 34° 30' and 36° N., and 70° and 71° 30' E. (Map: Afghanistan, O 5). The area is supposed to be approximately 5000 square miles. On the north is the Hindu Kush. The country, conspicuously mountainous and rugged, is notable for its narrow valleys and elevated passes. The climate is hot in summer and in winter most rigorous. Along the valleys cereals and fruit are cultivated, especially grapes, from which a wine of great local repute is manufactured, the chief occupations, however, are pastoral, and there are herds of cattle, sheep, and goats. Until 1855 it was known of this region, inhabited by various pagan tribes, who maintained a wild independence. It was subdued in 1895 and annexed to Afghanistan by the Ameer Abd-ur-Rahman, who forced Mohammedanism upon the people. The Kafirs, whose number is unknown, differ from their neighbors in feature, complexion, and customs. They are independent and warlike, being frequently at war with one another, and their simple patriarchalism is comparable with the earliest-known governmental institutions in Europe. Most of them are probably descended from eastern Afghan tribes who in the tenth century fled before Mohammedan invasion to this rugged region. The inhabitants who preceded them are probably represented in the modern population, particularly by the Presun tribe. Besides the Presungalis, the present inhabitants may in general be divided into the Siah-Posh (the most numerous) and the Wai-galis. The dialects of the Siah-Posh, with many dialects is that of the Presun and Wai languages, which are virtually unknown to Europeans—and the Presun perhaps is unknowable, so great appears to be its difficulty—have no similarity to each other or to the language of the Siah-Posh. None of these languages has a written literature. The Kafirs are a hardy, active people, but immoral, covetous, jealous, and of generally low culture. The women, practically without rights and held in small respect by their masters, do most of the labor. Some have seen in the Kafirs, unnecessarily, a large Greek admixture. Probably the majority of the people, despite the enforcement upon them of Islam, retain in secret the old degraded paganism. Consult Robertson, *Kafirs of the Hindu-Kush* (London, 1896).

KAFIRS, kâf'irz. Tribes of negroes, belonging to the great Bantu family inhabiting the southeastern coast of Africa. They are tall (1.715 meters), slim, and well built; skin of various shades of dark brown; hair thick, harsh, and woolly; nose broad and flat; lips thick; strong skin odor. Skull capacity, 1453 cubic centimeters; cephalic index, or ratio of head width to head length, 72.5. Under the general title are included the Ama-Xosas, of West Kafirland; Ama-Tembu (Tambukies), of Tambuland; Ama-Mpondo, of Pondoland; Ama-Baka, Ama-Mpondosi, and Ama-Xexibe, of East Griqualand; and Ama-Fingu, of Finguland, west of Tambuland. At one time their dominion covered a wider territory than at present, and doubtless in their turn they had driven out the original Hottentot and Bushman aborigines. The Kafirs are for the most part cattle breeders, though they raise millet, maize, yams, melons, and various vegetables, which with milk

form their diet. They eat meat only when fighting, and cattle are a medium of exchange, a bride costing from 10 to 100 head. Their houses are cone-shaped and are grouped in villages called kraals; but the care of their immense herds demands much moving about. In this connection it is worthy of mention that primitive methods of irrigation were in vogue. The women are the farmers and drudges, and their industrial apparatus is of the rudest sort. The Kafir is essentially a warrior. His lifelong feuds with the Bushmen and his later wars with Dutch and English have developed in him mental and physical qualities far above those of the true negroes. His weapons are the knobkerrie, or striking and throwing club, and assegais, or lances for hurling or for thrusting, and he carries a decorated shield of oxhide almost as high as the wearer. The warriors formerly wore toga-like cloaks of leopard skins or oxhide and paid great attention to dressing the hair. The government of the Kafirs is an absolute chieftaincy, the tribes all being under the hereditary sovereign, or *Inkose*, who is father, legislator, administrator, chief justice, and commander in chief. There is, besides, a supreme council of chiefs, over which he presides, and their decisions are the law of the land. The family, the clan, and the tribe are each responsible for all the actions of their members. In religious beliefs the Kafirs are on a much higher plane than most other African tribes. This is shown, e.g., by the delegation of a maiden daughter of the chief as custodian of the sacred fire, whose office was to purify the herds. Somewhat elevated conceptions of a future life were entertained by the Kafirs. Their type of religion was an advanced grade of ancestor worship. A dead chief was buried in the cattle kraal with an extended ceremony of interment and mourning. The spirit of the dead is supposed to return and take part in the councils of the tribe, being represented by a branch of his clan tree in which the spirit is thought to be present. Consult Theal, *History and Ethnography of South Africa before 1795* (3 vols., London, 1907-10).

KAFTAN, kâf'tân, JULIUS (1848-). A German Protestant theologian, born at Loit, Schlewig. He was educated at Erlangen, Berlin, and Kiel; in 1873 became professor of theology at Basel, and 10 years afterward at Berlin, where he was rector in 1905-06. He is regarded as a representative of the Ritschlian school of theology. His more important works are: *Die Predigt des Evangeliums im modernen Geistesleben* (1879); *Wesen der christlichen Religion* (2d ed., 1888); *Die Wahrheit der christlichen Religion* (1889, Eng. trans., Edinburgh, 1894); *Brauchen wir ein neues Dogma?* (3d ed., 1893); *Christentum und Philosophie* (3d ed., 1896); *Christentum und Nietzsche's Herrenmoral* (3d ed., 1902); *Dogmatik* (6th ed., 1908).

KAGA, kâ'gâ, or **KASHU**. A province on the west coast of the island of Hondo, Japan. It now forms part of the ken or Prefecture of Ishikawa. It was formerly the seat of Mayeda, the richest daimyo in the Empire, whose income was rated 1,027,000 koku of rice. His capital was Kanazawa, which has a population (1908) of 110,994. The town is 5 miles from the sea, has broad clean streets and fine public gardens, and is a place of great industry. It has a steam silk-reeling factory. The special products are inlaid bronzes, and the famous Kaga por-

celains, called by the Japanese *Kutani-yaki* (nine-valleys ware), from the name of the village Kutani, where this ware was first made about the middle of the seventeenth century, the mark Kutani-yaki being still retained, though much of the Kaga ware is made in several other places in the province, as at Enuma and Nomi, as well as in Kanazawa. This ware is decorated in gold and a soft russet red and is very attractive. The seaport of Kanazawa is Takama, and there are other important towns in the province. On the southeastern border rises the superb Hakuzan or Shiroshima, i.e., White Mountain, with a height of 8921 feet. The most important river of the province is Teboni-gawa.

KAGOSHIMA, kâ'gô-shê'ma (Jap., Basket Island). The chief city of the Province of Satsuma in the island of Kiushu, Japan, and the seat of the government of the ken or prefecture of the same name, which includes the provinces of Satsuma, Osumi, and Hyuga (Map. Japan, B 8). It was formerly the seat of the feudal barons of the Shimadzu family, one of the most powerful in the country. Kagoshima lies on the north-westerly side of a deep inlet of the same name. On a small island in the Gulf of K. . . and directly in front of the city, is . . . volcano Takura-jima. It is about 4000 feet high and has been active for a long time. On Jan. 12, 1914, the volcano erupted, causing considerable damage to the city and other nearby towns. The town itself covers considerable ground, has wide, clean, well-kept streets, includes among its most important industries the manufacture of cotton, silk, pottery, and glass, and exports rice, tea, camphor, and cedarwood. On the shore and forming a kind of suburb is Tanoura, where the famous cracked Satsuma ware—a kind of faience—is made. On Aug. 15, 1863, KAGOSHIMA was bombarded and burned by a British squadron as punishment for the murder (by military retainers of Shimadzu Saburo of Satsuma) of H. L. Richardson, an Englishman, in September of the preceding year, both the Shogun's . . . and the daimyo having failed to punish the murderers or give any satisfaction. It was here also that the great Satsuma Rebellion, under Field Marshal Saigo Takamori, broke out in 1877. The city was promptly taken by the Imperial troops, recaptured by the insurgents some months later, and finally captured by the Imperialists Sept. 24, Saigo and the rebel leaders being defeated with great slaughter and the rebellion crushed. Pop., 1898, 53,481; 1908, 63,640.

KAGU, kâ'gôo (native name). A remarkable bird (*Rhinochetus jubatus*) peculiar to the island of New Caledonia. It is gray above, paler below, with black markings on the wings and tail. The head carries a long crest, and the bill is bright red. It was formerly found all over the island, but is now confined to the more unfrequented parts, where it lives in the mountainous ravines and hides in holes and under stones. It is often kept in captivity in the East, in parks and zoölogical gardens. It is nocturnal and feeds on snails and other mollusks, insects, and the like. It resembles a rail in its general form, but is more like a heron in some of its habits. In its internal anatomy it shows so many and such peculiarities that its relation to other birds is still a matter of doubt. Its nearest relatives would seem to be the sun bitterns of South America, with which it is usually associated in the same order with

cranes. (See Newton, *Dictionary of Birds*, New York and London, 1893-96.) This resemblance is heightened by the fact that, like the sun biter, the kagu in courtship or in moments of excitement will execute a variety of violent gesticulations and dance about, displaying the otherwise concealed spottings on its wing quills, spreading its wings and tail, and even holding the tail or the tip of a wing in its bill, as if to make it more conspicuous. Nothing is known as to its breeding habits, nest, or eggs in a wild state, but it has laid and once reared young in captivity. Both sexes unite in forming a rough nest of twigs and leaves, and one or two eggs are laid. Thirty-six days are required for incubation. See Plate of BUSTARDS

KAGUAN, ká'gwan. See COBEGO.

KAHLE, ká'le, PAUL (1875-). A German Semitic scholar. He was born in Hohenstein, East Prussia; was educated in Marburg, Halle, and Berlin, taught and preached at Braila in Rumania (1902-03) and in Cairo (1903-08); became privatdocent at Halle in 1909; was an assistant of the German Evangelical Archaeological Institute in Jerusalem in 1909-10, and then became librarian of the German Oriental Society (Deutsche Morgenländische Gesellschaft). Kahle published: *Samaritanisches Pentateuchtargum* (1898, 1901); *Zur Geschichte der hebräischen Punctuation* (1901); *Der masoretische Text des alten Testaments* (1902); *Die arabischen Bibelübersetzungen* (1904); *Masoreten des Ostens* (1913); *Aulad-Al-Bedunen* (1913). *Bauernzahlungen aus Palastina* (1914).

KAHLENBERG, ka'len-bërg, LOUIS (1870-). An American chemist, born at Two Rivers, Wis. He graduated in 1892 from the University of Wisconsin, to which, after taking his Ph.D. at Leipzig in 1895, he returned as instructor (1895-97), later becoming assistant professor of physical chemistry (1897), professor (1900), and head of the chemistry department (1907). He was appointed associate editor of the *Journal of Physical Chemistry* and of the *Journal de Chimie Physique* and served as president of the Wisconsin Academy of Sciences, Arts, and Letters (1906-09) and as vice president of the American Electro-Chemical Society (1902-07, 1910-12). Besides monographs and articles dealing mainly with electrolysis, osmosis, and solutions, he is author of *Laboratory Exercises in General Chemistry* (1907; 3d ed., rev. 1911); *Outlines of Chemistry* (1909); *Qualitative Chemical Analysis* (1911), with J. H. Walton, *Chemistry and its Relations to Daily Life* (1913).

KÄHLER, ká'ler, MARTIN (1835-1912). A German Protestant theologian, born at Neuhausen, near Königsberg, a brother of Otto Kähler, a general and military historian. He was educated at Königsberg, at Heidelberg, Halle, and Tübingen. After four years as docent at Halle he became professor at Bonn (1864) and in 1867 returned to Halle, where he was appointed professor of New Testament exegesis and of dogmatics. His works include the biographies of Tholuck (1877) and Müller (1878), *Das Gewissen* (1878); *Galaterbrief* (2d ed., 1893); *Die Wissenschaft der christlichen Lehre* (3d ed., 1905); *Hebraerbrief* (2d ed., 1889); *Der sogenannte historische Jesus und der geschichtliche biblische Christus* (2d ed., 1896); *Der lebendige Gott* (3d ed., 1906); *Der sogenannte Epheserbrief des Paulus* (1894); *Dogmatische*

Zeitfragen (1898; 2d ed., vol. i, 1906, vol. ii, 1908); *Die Herrlichkeit Jesu* (1901); *Das Kreuz, Grund und Mass für die Theologie* (1911).

KAHN, kân, GUSTAVE (1859-). A French poet, novelist, and critic, born at Metz. He studied at the Ecole des Chartes and at the Ecole des Langues Vivantes Orientales. As early as 1880 he began publishing articles in reviews. This pursuit was interrupted by a visit to Africa, but in 1886 he founded *La Vogue*. The same year, with the collaboration of Paul Adam and Moréas, he founded *Le Symboliste*. In 1888, while one of the editors of the *Revue Indépendante*, he published a number of important critical articles. In 1897, with Catulle Mendès, he organized the matinées of poets, first at the Odéon Theatre, then at the Antoine and Sarah Bernhardt theatres. The object of these was to encourage the younger writers of symbolistic tendencies. His claim that he originated *vers libre* has been contested. He was made an Officer of the Legion of Honor. Among his collections of poetry are: *Les palais nomades* (1887); *Chansons d'amant* (1891); *Premiers poèmes* (1897), particularly important because of the preface. Novels: *Le roi fou* (1895); *Les fleurs de passion* (1900); *L'Adultère sentimental* (1902). His *Symbolistes et décadents* (1902) throws much light upon the works of poets belonging to that school.

KAHN, OTTO HERMANN (1867-). An American banker and promoter of opera. He was born at Mannheim, Germany, received a collegiate education and his training in banking in that country, and for five years was connected with the London branch of the Deutsche Bank. Coming to the United States in 1893, he was then with the banking house of Speyer & Co. for two years, traveled in Europe in 1895-96, and after 1897 was a member of the later prominent banking firm of Kuhn, Loeb & Co. He was chosen a director in various railroads and trust companies and became widely known for his interest in operatic productions, as chairman of the board of directors of the Metropolitan and Century opera companies, a director of the Boston Opera Company, and vice president of the Chicago Grand Opera Company. In December, 1914, he resigned from the board of the Century.

KAHNIS, kâ'nés, KARL FRIEDRICH AUGUST (1814-88). A German Lutheran theologian. Born at Greiz, he was educated at Halle, became a lecturer at Berlin in 1842 and assistant professor at Breslau in 1844, and after 1850 was professor of theology at the University of Leipzig. In 1860 he became canon of Meissen. Although he belonged to the party of Old Lutherans, Kahn is was a liberal theologian. His works include: *Die Lehre vom heiligen Geist* (1847), *Der innere Gang des deutschen Protestantismus seit Mitte des vorigen Jahrhunderts* (1854, 3d ed., 2 vols., 1874; Eng trans, 1856); *Die lutherische Dogmatik* (3 vols., 1861-68; 2d ed., 2 vols., 1874-75), his most important work. Consult Winter, *Dr Karl Friedrich August Kohns* (Leipzig, 1896).

KAHOKA, kâ-hô'ká. A city and the county seat of Clark Co., Mo., 20 miles west of Keokuk, Iowa, on the Burlington Route (Map: Missouri, E 1). It trades in the products of the surrounding farming and stock-raising country and has grain elevators, cement-block factories, a milk condensery, etc. The city owns the water

works and electric-light plant. Pop., 1900, 1818; 1910, 1758.

KAHULAU. See HAWAIIAN ISLANDS.

KAIAIANIAN, kī-ā'ni-an (from Pers. *Kai*, Av. *Kavi*, King). Name of an ancient Iranian or Persian dynasty, partly legendary, but merging into an historical line, which ruled over Persia after the Peshadian, or great mythical dynasty of Iran. The last members of the Kaianians are certainly contemporaneous with the later Achaemenian monarchs and are to be identified with them, although the Persian traditions connected with their names and reigns are more fanciful and imaginative than are the annals of the Greeks. Regarding the earliest Kaianians there is much uncertainty, owing to the lack of authentic records, but Persian tradition ascribes the founding of the Kaianian line to the stand taken by the great legendary hero Rustam, the leader against Afrasiab of Turan, when he placed Kai Kobad (Avestan, *Kavi Kavāta*) on the throne of Iran and established the much-honored house. The designation Kaianian is due to the title Kai prefixed to each name in the dynasty.

The successor of Kai Kobad was Kai Kaus (Av. *Kavi Usan*), and he in turn was followed by Kai Khosru or Khusru (Av. *Kavi Husravah*), whom Persian tradition, apparently in vain, seeks to identify with Cyrus the Great. This king's reign, like that of the other Kaianians, but more in length, is described in the *Shāh Nāmah* (Book of Kings) by Firdausi (q.v.). Next followed Luhrasp, and then came his son Gushtasp, who has been identified, on insufficient grounds it seems, with Darius Hystaspis. (See **DARIUS**.) In Gushtasp's reign the prophet Zoroaster appeared. After Gushtasp came Bahman, or Vohuman, i.e., Ardashir Dirazdast, whose rule is to be identified with that of Artaxerxes Longimanus. (See **ARTAXERXES**.) Similar historical identifications are now to be made between the Kaianian Darah or Darab and Darius Nothus, and between Dara and Darius Codomanus. (See **DARIUS**.) According to the artificial chronology of the Pahlavi Bundahishn (vol. xxx, nos. 6, 7), the accession of Kai Kobad, or the first Kaianian, would be placed as early as 1005 B.C., and the reign of Kai Vishtasp would extend over 120 years. So we find it in Firdausi, Masudi, and Albiruni. A reign of such extravagant length is apocryphal and points rather to a dynasty. The fall of the Kaianian power came to pass through the invasion of Alexander the Great and the consequent overthrow of the Persian Empire. Consult: Dubeux, *La Perse* (Paris, 1881); Jackson, *Zoroaster, the Prophet of Ancient Iran* (New York, 1889); Justi, *Iranisches Namenbuch* (Marburg, 1895); id., "Geschichte Irans," in *Grundriss der iranischen Philologie*, vol. ii (Strassburg, 1896-1904). See also **PERSIA, History**.

KAIBAB PLATEAU. See **GREAT AMERICAN DESERT**.

KAIBA RIVER. See **MODDER RIVER**.

KAID. See **SHEEP LOUSE**.

KALETUR (kī'è-tōor') **FALL.** A waterfall in British Guiana, formed by the waters of the Potaro River, an affluent of the Essequibo. The river plunges with a sheer descent of 741 feet over a hard ledge of rock 370 feet wide, whose underlying softer layers are worn back into an enormous black cavern, against which the white spray appears with wonderful effect. The surrounding scenery is grand and picturesque; the

escarpment has been worn into a huge amphitheatre, with rocky sides surrounding the whirlpool below. It was discovered in 1870.

KAIFENG, kī'feng, or **KAIFONG.** A walled city of China, capital of the Province of Honan (q.v.), 11 miles south of the Hoang-ho or Yellow River and about 450 miles southwest of Peking (Map: China, K 5). Formerly known as Pienliang, it was the capital of the country from 960 to 1129. It covers a considerable area; its most noticeable feature is a 13-story pagoda of brown glazed brick. It was formerly an important city, but many misfortunes have crippled it and for a long time it has had little commerce or industry. The suburbs, where the business is mostly done, are large and have a large transit trade with Fanchang and other ports on the Han River. **Kaifeng** is on a branch line a little east of the Hankow-Peking Railway, completed in 1905. Pop., about 200,000. It has been overwhelmed 14 times by flood, 9 times by earthquake, 6 times by fire, and 11 times taken by assault. In 1642 it was inundated by its own friends, having been besieged for six months by 100,000 rebels. The general who came to its relief conceived the idea of raising the siege by laying the surrounding country under water. With this end in view he broke down the embankments by which the Yellow River is kept in its course (the bottom of the river being higher than the surrounding country), and, while he succeeded in drowning the rebels, the city was overwhelmed and 300,000 of the inhabitants drowned. Here are found the remnants of a colony of Jews who entered China during the Han dynasty or earlier, and claim descent from the tribe of Asher. They were discovered in the seventeenth century by the Jesuit missionary Matteo Ricci. In 1164 they had built a fine synagogue, with Imperial permission, but in the numerous disasters which have overtaken the city this and several others which had followed were ruined, and now little remains but debris to mark its site. They were visited in 1850 by a native Christian deputation, sent by the Bishop of Peking, Dr. Medhurst, of the London Missionary Society, who obtained some of their Hebrew Scriptures and transcribed two of their historical tablets which still remained. When they were visited later, the remaining rolls of the Law were purchased. They had taken to eating pork however, and they are now scarcely distinguishable from the Chinese population. They now have but a confused recollection of their ancient traditions. The Chinese call them the Blue Mohammedans, also *Tao Kim Hwug* (the sect which plucks out the sinew), in allusion to a well-known Jewish custom. This strange colony is now only a few hundred in number, in a poverty-stricken state. Efforts are being made to rehabilitate it and rebuild the synagogue.

KAI KATU KHAN, kī kă'tu kân. See **MONGOL DYNASTIES**.

KAILAS, kī-lās'. The highest peak of the Gangri Mountains in Tibet. It is situated near the Indian boundary, between the sources of the Indus and the Brahmaputra, and has an altitude of over 22,000 feet. It is held in high veneration by the Hindus, who consider it the abode of the gods, and do homage by walking around the base, generally a three weeks' journey.

KAILĀSA, kī-lā'sā. The most important of the rock-cut temples at Ellora, near Auranga-

bad, about the tenth century A.D. The exterior of the temple is separated from the original granite cliff in which it was cut by a broad passage, with ponds, obelisks, colonnades, and sphinxes. The walls are covered with sculptures of colossal figures. The entrance hall, 137 by 88 feet, with several rows of columns, leads to a chamber 244 by 147 feet, containing the sanctuary, cut from a single block. The roof is supported by four rows of columns, with colossal elephants. The temple, with a pyramidal dome, measures 101 feet by 56. Its height varies from 16 to 90 feet. On its walls are sculptured images of all the Indian divinities, and scenes from the Mahabharata and Ramayana. The style of its architecture is Dravidian (Consult Ferguson and Burgess, *Cave Temples of India* (London, 1880).

KAILYARD' SCHOOL. A nickname applied to the writers whose themes are drawn from peasant life in Scotland. The term is taken from the motto of Ian Maclaren's *Bonnie Brier-Bush*, "There grows a bonnie brier-bush in our kailyard."

KAIMAKAM. See CAIMACAM

KAIN, JOHN JOSEPH (1841-1903). An American Roman Catholic archbishop. He was born at Martinsburg, Va. (now W. Va.); was educated at St. Charles's College, Ellicott City, Md., and at St. Mary's Seminary, Baltimore, and was ordained in 1866. For several years his parish duties extended over eight counties in West Virginia and four in Virginia. He was consecrated Bishop of Wheeling in 1875 and was made coadjutor to Archbishop Kenrick of St. Louis in 1891, administrator of the archdiocese in 1893, and Archbishop in 1896.

KAINITE, ki'nit, or **KAINIT**, ki'nit (from Gk. *kainós*, *kainos*, new). A hydrous magnesium and potassium chloresulphate, composed of magnesium sulphate, potassium chloride, and water of crystallization. Its crystals are monoclinic and have a vitreous lustre. When pure, the mineral is colorless, but from impurities it usually varies from white to dark red. It is easily soluble in water and has an astringent taste. It generally occurs in granular masses, being chiefly found at Stassfurt, Germany, and in Galicia. It is useful in the arts on account of its potassium constituent and is extensively used as a fertilizer, imports into the United States about \$2,000,000 yearly.

KAINOZOIC ki'nō-zō'ik. See CENOZOIC.

KAINZ, kints, JOSEPH (1858-1910). An Austrian actor, born at Wieselburg in Hungary. He first appeared on the stage in Vienna in 1873; played three years at the Court Theatre at Munich (1880-83), and in 1883 was engaged by the German Theatre in Berlin for a period of 16 years. He returned to Vienna in 1899, visited America several times, played Romeo; Mortimer, in Schiller's *Maria Stuart*; Ferdinand, in the same author's *Kabale und Liebe*; and Alceste, in Molière's *Misanthrope*. Consult Gregori, *Joseph Kainz* (2 vols., Berlin, 1905).

KAIPING, ki'ping'. A small town in the Province of Chili, China, lying 80 miles northeast of Tientsin, in lat 30° 36' N. and long. 118° 10' E. It is of note only as being the centre of a coal field, though the coal is not of the best quality and is used only as a steam coal. The mines are connected by rail with Peh-tang on the Pei-ho, a distance of 40 miles. This was the first real railway in China and later was extended to Tientsin, thence to Paotingfu,

capital of the province, to Peking, and north-east to Shanhaikwan, where it meets the Manchurian railways and through them the Trans-Siberian. A rate war in 1911 between the two mining companies led to an amalgamation in 1912. The combined output was 3,190,115 tons, with coal in sight of 10,769,000 tons. Gross profits for 1912-13 were \$2,934,736; net profits \$1,655,748. Eleven thousand persons are employed.

KAI-PING, ki'ping'. A town of Manchuria in the Liao-tung peninsula, about 30 miles southeast of the port of Niuchwang and on the Port Arthur railway. It was taken by the Japanese under General Oku, July, 1904, during the Russo-Japanese War (qv).

KAI-POMO, ki'pō'mō. See KATO

KAIRA, ki'rā. The capital of a district of the same name in the Northern Division, Bombay, British India (Map. India, B 4), near the confluence of the two small rivers Watruk and Seree, 20 miles southwest of Ahmadabad. It is surrounded by a wall with bastions. The public buildings include a beautifully carved Jain temple, a large Anglican church, a courthouse of Doric architecture, a clock tower, library, and reading room. The city existed in the fifth century, while its foundation is supposed to date from 1400 B.C. Pop., 1901, 10,392, 1911, 7,399.

KAIRWAN, kir-wān' (Ar. *kairuwān*, from Pers. *kārawān*, caravan, or resting place). A town in Tunis, 30 miles southwest of Susa (with which it is connected by rail) and about 80 miles south of the city of Tunis. It is situated in a treeless plain, covered in part by salt marshes, some distance west of a stream flowing south to Sedi el-Heni Lake (Map Africa, F 1). About 670 A.D. the Mohammedan General Ukbah, after having conquered north Africa, selected a site in the midst of a dense forest, then infested by wild beasts and reptiles, as the location of a military post. It was to keep in check the Berber hordes and was selected far from the sea in order to avoid danger of attack. This "resting place" soon developed into a city, which the fertility of the region made celebrated for its olive groves and luxuriant gardens. Fifteen years after its founding it was besieged by an overwhelming force of Berbers and fell into their hands after Ukbah had been killed in battle. It was later recaptured and though more than once besieged remained for four centuries the "holy city," the Mecca of north Africa. In the tenth century the city was embellished by the Aghlabites, later it suffered considerably from the rivalry of Mahdiyyah and then of Tunis, but in the eleventh century, as the capital of the Siride Muizz, was still famous for its wealth and prosperity. About the middle of that century, however, the Fatimites of Egypt instigated the Egyptian Bedouins to invade this part of Africa. Kairwan, attacked and taken, was so utterly destroyed that it never afterward regained its former position, it continued, nevertheless, to be the centre of theological study. In 1881 it was taken by the French without much difficulty, though much opposition had been expected from the religious zealots. It was then newly fortified and made the capital of a "contrôle civil."

It is surrounded by a high brick wall, pierced by five main gateways and surmounted by towers; the circuit is about 3500 yards and almost forms a hexagon. Until the French occupation

access to the city was difficult for non-Mohammedans, but visitors at present have little trouble in entering even the mosques. There are about 80 ecclesiastical structures; numerous tombs of saints and warriors, for the dead are brought from afar to be buried in the "holy city"; and about 30 mosques, of which six are important ones. The Ukbah Mosque, which was rebuilt in 827, is in the northern section of the city and is one of the most magnificent and sacred in Islam, being considered one of the four gates of Paradise. It contains about 430 antique Roman columns of marble, granite and porphyry, with horseshoe arches; the ceiling is flat, of dark wood; in the centre of the immense court, which is surrounded by a double colonnade, is a marble fountain over the sacred well, which is supposed to communicate with the Zemzem at Mecca; the mihrab is tiled; the sanctuary double, with 10 arches in one direction and 17 in the other. The chief manufactures of the place are copper utensils, carpets, morocco leather, oil of roses, saltpetre, and potash, the handsome bazars are well stocked, and the caravan trade is of considerable importance. Pop. about 25,000.

KAISARIEH, kī'sā-rē'e. A town of Asiatic Turkey, situated in the Vilayet of Angora, a short distance from Mount Argæus and 160 miles southeast of Angora (Map: Turkey in Asia, C 2). It has narrow and crooked streets and is partly surrounded by walls. There are a mosque, dating from 1238, and extensive bazars. The chief occupation of the inhabitants is trade, for which the city is well adapted on account of its location, exporting hides, carpets, fruit, and raisins. Kaisarieh is the seat of a Greek bishop, an Armenian archbishop, and a Roman Catholic bishop. In the town are a high school, a kindergarten, and an American mission doing medical and educational work. Pop. (est.), 50,000, of which 26,000 are Turks. Kaisarieh occupies the site of the ancient Cæsarea in Cappadocia.

KAISER, kī'zēr (OHG. *keisur*, AS. *cāsere*, OS. *kēsūr*, Goth. *kaisar*, Gk. *kaisar*, *kaisar*, emperor, from Lat. *Cæsar*, referring especially to Gaius Julius Cæsar). The German equivalent for Emperor. Under the early Roman Empire the acknowledged heirs to the throne added the name Cæsar to their own in honor of the "divine Julius." Diocletian (q v) made it distinctively a title and bestowed it on the two associates and successors of the senior emperors, or Augusti. On the division of the Roman Empire (395 A.D.) the title was borne by the emperors of the West and of the East. It passed away in the West with the dethronement of the last Emperor (476 A.D.), but was revived in 800, when Charles the Great was crowned Roman Emperor in St. Peter's at Rome. From this time dates the association of the Roman Imperial title with the kingship of a "barbarian" nation, first the Franks and then after 962 the Germans. (See HOLY ROMAN EMPIRE.) From Otto the Great to Francis II the King chosen by the German nation as King of the Romans became Emperor of the Holy Roman Empire—at first by consecration at Rome, but later through the very act of election. It was customary, however, for the German King of the Romans to be chosen during the lifetime of the Emperor, on whose death he succeeded to the higher title. Charles V, whose coronation took place at Bologna in 1530, was the last German King to be crowned in Italy.

Until the end of the eighteenth century the opinion was prevalent that there could be but one Christian Emperor. After the downfall of the Eastern Empire, in 1453, the Sultan also assumed the title of Emperor; but the German Emperor recognized this rival title only in 1718. This recognition was followed by the assumption of the title of Czar by Peter the Great in 1721. After the coronation of Napoleon I as Emperor of the French, in 1804, Francis II of Austria adopted the title of Emperor of Austria and in 1806 dropped that of Holy Roman Emperor. In 1851 Napoleon III took up the pretensions of Napoleon I as successor of Charles the Great. In Germany the revival of the title of German Emperor by the Nationalist movement of the revolution of 1848 was unsuccessful; but after the Franco-Prussian War in 1871 King William I of Prussia assumed the title of German Emperor, which carries with it only a restricted Imperial prerogative and must be distinguished from the older title of Emperor of Germany. In 1876 the Queen of England assumed the title of Empress of India, and since 1877 the Sultan of Turkey has called himself Osmanic Emperor. See CÆSARISM, CZAR; EMPEROR.

Bibliography. Julius Ficker, *Das deutsche Kaiserreich* (Innsbruck, 1861), id., *Deutsches Königthum und Kaiserthum* (ib., 1862), Von Sybel, *Die deutsche Nation und das Kaiserreich* (Düsseldorf, 1862); Kuepper, *Nationaler Gedanke und Kaiseridee* (Freiburg, 1898); Lackmann, *Das Kaisertum* (Bern, 1903); James Bryce, *Holy Roman Empire* (New York, 1911).

KAISER, ISABELLE (1866—). A Swiss author, born in Beckenried on Lake Lucerne and educated at Geneva. She first wrote in French, publishing the volumes of verse *Ici-bas* (1888), *Sous les étoiles* (1890), *Des ailes!* (1897), and *Le jardin clos* (1912), and the romances *Cœur de femme* (1891); *Sorcière* (1895), which was a story of witchcraft, *Héro* (1898), the scene of which is laid on Lake Lucerne, *Notre père qui êtes aux cieux* . . . (1899), a sketch of urban poverty; *Vive le roi!* (1903), a story of the Vendée, *L'Éclair dans la voile* (1907); *Marcienne de Flue* (1909). Her work in French received a prize from the French Academy. She also wrote in German—a novel *Wenn die Sonne untergeht* (1901), poems called *Mein Herz* (1908), a romance *Die Friedenssucherin* (1908), *Der wandernde See* (1910), and *Von ewiger Liebe* (1913).

KAISERSLAUTERN, kī'zērs-lou'tērn. A prominent and thriving town of the Bavarian Palatinate, Germany, situated on the Wald-lauter, 42 miles by rail west of Mannheim (Map: Germany, B 4). It has a fine new church of St. Mary, a fourteenth-century Protestant church, hospitals, an industrial museum, and a municipal theatre. The most prominent church is the Protestant. Its schools include a Gymnasium, manual-training shops, an industrial school, agricultural school, and a teachers' seminary. The principal industries comprise spinning factories (worsted and cotton), one employing 1600 hands, and manufactories of structural steel, sewing, and other machines, boilers, car wheels, safes, blank books, illuminating oils, lumber, bricks, bells, furniture, and shoes. There are also extensive railway shops, ironworks, and quarries. The trade in lumber and fruit is extensive. The town is of ancient origin. In 1152 Frederick Barbarossa built a fine palace

here. It was demolished during the Spanish War of Succession. Kaiserslautern became a free Imperial city in the thirteenth century, but lost its independence in 1357, when it passed to the rulers of the Palatinate. It became French in 1801 and passed to Bavaria in 1816. It was the seat of the provisional government during the uprising in the Palatinate in 1849. Pop., 1900, 52,306, 1910, 54,659.

KAISERSWERTH, kī'zērs-vért'. A town in the Rhine Province, Prussia, situated on the right bank of the Rhine, 6 miles from Düsseldorf. It is chiefly important for the house of evangelical deaconesses established by Theodor Fliedner (q.v.) in 1836 and now having branches all over the civilized world. It has small manufactures of silk, paper pulp, aniline dyes, bricks, and dairy stuffs. Pop., 1910, 2804.

KAISER WILHELM CANAL. See CANAL.

KAISER-WILHELMSLAND, kī'zēi-vil'hēlms-lānt'. The German portion of New Guinea (q.v.) Area, 70,135 square miles. Taken by Australian forces Sept. 25, 1914.

KAJANUS, kā-yā'nus, ROBERT (1856-) A Finnish composer, born at Helsingfors. In 1877 he entered the Leipzig Conservatory, studying under Richter, Jadassohn, and Reinecke. After graduation, in 1880, he spent two more years studying in Paris and Dresden, where his first orchestral works were performed. In 1886 he founded in his native city an orchestral association, which he soon brought to such a degree of efficiency that in 1888 he was able to produce for the first time in Finland Beethoven's Ninth Symphony. Under his leadership the association grew steadily, was later incorporated as the Helsingfors Philharmonic Orchestra, and is to-day one of the finest bodies of instrumentalists in Europe. In 1897 he became director of music at the University of Helsingfors. He was the first of the serious Finnish composers to strive consciously for distinct national expression. Among his principal works are two symphonic poems, *Aino* and *Kullervo*, two Finnish *Rhapsodies*, an orchestral suite, *Sommererinnerungen*; several cantatas, piano pieces, and songs.

KAKA, kā'kā (Maori name, meaning 'parrot,' onomatopoeitic in origin). A parrot of the New Zealand genus *Nestor*, by some regarded as a family (Nestoridae). This group contains large, handsome parrots, with beak greatly prolonged (especially in the upper mandible) and compressed, and tongue tipped with a "brush" of fine hairs. Two species are extinct—*Nestor productus*, formerly of Phillip Island, and *Nestor norfolcensis*, once numerous on Norfolk Island. The existing species are two—the kaka proper (*Nestor meridionalis*) and the kea (*Nestor notabilis*, q.v.). The kaka inhabits both islands of New Zealand, but recently has become reduced in numbers, since it is very unsuspicious of harm and is slow of flight. Its general color is brown, with a grayish cap, yellow ear coverts, and a tinge of red on the rump, abdomen, and under surface of the wings. (See Plate of PARROTS AND PARAKEETS.) It inhabits the forests and feeds on juicy berries, nectar brushed from large flowers by means of its tongue, and grubs obtained by stripping off bark or tearing to pieces decaying wood and growing epiphytes. It is social and noisy and breeds in hollows of trees. Consult Buller, *Birds of New Zealand* (2d ed., London, 1888).

KAK'ABEK'A FALLS. A picturesque cat-

aract of the Kaministiquia River, Ontario, Canada, 14 miles west of Port Arthur, situated near its mouth on Lake Superior. The falls are 150 yards wide and 130 feet in height.

KAKAPO, kā'kā-pō' (Maori name, meaning 'night parrot'), or OWL PARROT. A nocturnal, ground-keeping parrot (*Stringops habroptilus*) of New Zealand, also called "ground" and "night" parrot. It is about as large as a raven, green, marked with yellow and black, and has a quaint owl-like aspect. The kakapo takes possession of a hole as a home and nesting place, but also seems able to dig a burrow for itself. Its food is almost entirely vegetable and is gathered mainly on the ground. The flesh is more delicate than that of any other parrot. Since white men settled in New Zealand, this interesting bird has almost disappeared from the northern island and is rare in the middle island. It is the only known bird having large wings which does not use them for flight. When it does fly, its movements are more like those of a flying squirrel than of a bird. The great pectoral muscles, the keel of the sternum, and the furcula have atrophied and disappeared. Consult Hutton and Drummond, *Animals of New Zealand* (1905).

KAKAPUSHI. See HIMALAYA.

KAKAR, kā'kār. See MUNTJAC.

KAKE, kā'kē. See TLINGIT.

KAKHYENS, kāk-hī'enz, **KHYEN**, or **KA-KAU**, ka-kou' The name applied by the Burmese to certain primitive tribes of the mountains of Arakan and northern Burma as far as the frontiers of Assam and Tibet. See CHINS.

KAK'KE, kak'kā' (Sinitic-Japanese, leg affection, from Chin *Kioh*, leg + *K'z*, air, humor). A specific disease endemic in certain parts of Japan, and believed to be identical with the beriberi of India, the Malay Peninsula and Archipelago, and Brazil. It was first described in 1715 by a Japanese physician who found it endemic in Yeddo and Kyoto, but rare in other places. It has spread since then and is now found in many other localities, becoming at times epidemic. It affects the lower extremities and is characterized by numbness of the skin of the legs, loss or impairment of motive power, the swelling of the legs, especially over the shin bone, cramps in the calf of the leg, frequently dropsy, and in some cases it affects the heart and may then prove rapidly fatal. The origin and causes of the disease are unknown. Consult: Chamberlain, *Things Japanese* (London, 1891); Anderson in *The Transactions of the Asiatic Society of Japan*, vol. vi (Yokohama, 1878); Baelz and Miura, "Beriberi oder Kakke," in Mense's *Handbuch der Tropenkrankheiten* (Leipzig, 1905). See BERIBERI.

KAKODYL. See CACODYL.

KALA AZAR, kā'lā ā-zār', FEBRILE TROPICAL SPLENO-MEGALY. A disease characterized by low fever and sores, the spleen and many fluids containing small bodies with two nuclei, one-third the size of a red blood corpuscle (Leishman-Donovan bodies). The disease is widespread in India, especially in Assam, where it exists in its severest epidemic form. It occurs, however, throughout the East, from Algiers to China. Leishman discovered the parasite in 1900 and published his observations in 1903. Wright, of Boston, found the parasite in scrapings from "Delhi sore," and in 1905 P. Manson suggested that "Oriental sore" may be the analogue of vacinia, for its fluid contains Leishman bodies and

its occurrence prevents kala azar. "Oriental sore," found where camels are numerous, has been perpetuated by the Jews of Bagdad, who have inoculated it for many generations. It is probably kala azar passed through camels. The bedbug is now believed to carry and transmit the disease. The mortality rate is exceedingly high.

KALABAGH. See SALT RANGE.

KALAFAT, kă'lă-făt'. A strongly fortified town of Rumania, situated on the left bank of the Danube, opposite the Bulgarian town of Widdin, 155 miles west-southwest of Bucharest (Map: Balkan Peninsula, D 3). With the Rumanian capital it is connected by railway. It figured prominently during the Russo-Turkish War of 1828-29, when the Russians lost here in battle 10,000 men. Pop., 7113.

KALAHARI (kă'lă-hă'rê) **DESERT.** A vast region in South Africa, forming parts of the territories of German Southwest Africa, Cape of Good Hope, and Rhodesia, and extending to about the parallel of lat. 21° S. (Map: Cape of Good Hope, E 4). Its boundaries and area have not been determined, but its dimensions are about 400 miles from east to west and 600 miles from north to south. It consists of a large basin or depression of the great South African plateau and has a general elevation of from 3000 to 4000 feet. It has the character of a desert only along the borders. The rains which prevail there from August to April, together with a copious supply of ground water, produce a considerable vegetation in the interior, which in places takes the form of extensive forests of thorny trees and shrubs. In the eastern part of the region there are a number of deep basins, which fill up with water during the rainy season. The desert is inhabited only by stray bands of Bushmen and Bechuanaas, of whom some are known as Bakalahari. The elephant, giraffe, lion, leopard, and a few other animals of the tropical regions are found mostly in small numbers and are partly protected by law. The native melon constitutes one of the chief food supplies of the natives as well as of their cattle.

KALAKAUA, kă'lă-kou'ă, **DAVID** (1836-91). A King of the Hawaiian Islands (q.v.).

KALAMATA, kă'lă-mă'tă. A seaport, archiepiscopal see, and capital of the Nomarchy of Messenia, Greece, on the Nedon, 1 mile from its mouth, near the head of the Gulf of Messenia, 17 miles southwest of Sparta by rail (Map: Balkan Peninsula, D 6). The town is surrounded by orange, fig, mulberry, and olive groves, the products of which it exports in large quantities. Silk is manufactured and exported; the principal imports are foodstuffs. The harbor, though it has been improved, is still much exposed. The first national assembly of Greece was held here, in 1821. In 1825 it was pillaged by Ibrahim Pasha. Pop., 1907, 15,397.

KALAMAZOO, kă'lă-mă-zoo'. A city and the county seat of Kalamazoo Co., Mich., 49 miles south of Grand Rapids, on the Kalamazoo River, and on the Michigan Central, the Lake Shore and Michigan Southern, the Chicago, Kalamazoo, and Saginaw, the Grand Rapids and Indiana, and three other railroads (Map: Michigan, D 6). It is the seat of Kalamazoo College (Baptist), opened in 1855, and of the Western Michigan Normal School, founded in 1904. Among other noteworthy features are the Michigan Asylum for the Insane, the public library, Nazareth Academy (Roman Catholic), St. An-

thony School for Feeble-Minded, Todd Museum of Art, Central High and Manual Training School, and the Y. M. C. A. building. The principal industries are celery and peppermint growing and the manufacture of paper, windmills, wagons and buggies, boilers and engines, saw-mill machinery, caskets and coffins, corsets and other articles of women's wear, electric signs, fishing tackle, heaters, stoves, sleds and folding chairs, railway supplies, society regalia, and cigars. The growth of the paper industry has been especially marked. The government is vested in a mayor and a unicameral council, annually elected, and subordinate administrative departments, all except the school board, which is chosen by popular election, being governed by committees appointed by the mayor. The city owns and operates its water works and electric-light plant. Settled about 1829, Kalamazoo was incorporated as a village in 1843 and was chartered as a city in 1884. Pop., 1900, 24,404, 1910, 39,437, 1914 (U. S. est.), 45,842.

KALAMAZOO RIVER. A river of Michigan, which rises in southwestern Jackson County, near the south boundary of the State, and, after a generally northwesterly course of about 100 miles, empties into Lake Michigan at Saugatuck (Map: Michigan, D 6). At its mouth, which is an excellent harbor for vessels of 100 tons, it is 350 feet wide and 10 to 15 feet deep, and it is navigable for 50-ton vessels 38 miles to Allegan. The river furnishes extensive water power. The cities of Battle Creek and Kalamazoo are situated on its banks.

KALAN, **ABRAHAM.** See CALOVIUS, ABRAHAM.

KALAND. See CALAND.

KALANGS, kă-längz'. A primitive Javanese people, of whom but few survive and about whose physical characters considerable difference of opinion has existed. Consult Meyer, *Die Kalangs auf Java* (Leipzig, 1877).

KALAPOOIAN. See KALAPUYA.

KALAPUYA, kă'lă-poo'yă, or **CALLAPOOYA**. A group of tribes, constituting a distinct stock, formerly occupying the greater portion of the Willamette River valley in northwestern Oregon. Although at one time numerous, they were never prominent in history, being of unwarlike character, so that by the constant inroads of the coast tribes and the later cruelties of the white pioneers they have been almost exterminated. Some small bands, known officially as Lakmiut, Mary's River, Santiam, and Yamhill, are gathered upon Grande Ronde reservation in the same region. They formerly subsisted largely upon bulbous roots of water plants, practiced head flattening, but not tattooing, had a mild system of slavery and some curious customs, the bride's relatives stripping the bride and all his relatives, male and female, of their clothing and appropriating it to themselves. They are now citizens, civilized and self-supporting, raising grain and hay and deriving a considerable income from the sale of their native basketry, though numbering but 106. Consult Lewis, *Tribes of the Columbia Valley and the Coast of Washington and Oregon* (Lancaster, Pa., 1906).

KALATHARRAL. See CALAHORRA.

KALB, kălp, **CHARLOTTE VON** (1761-1843). A German literary woman, best known as a friend of Schiller. She was born, a Marschalk von Ostheim, at Waltershausen and in 1783 married Heinrich von Kalb. She met Schiller at

Mannheim in 1784, and in 1787 he went on her account to Weimar. At one time the poet proposed to marry her; after his marriage the poet Hölderlin, a tutor in her family (1793-94), succeeded Schiller in her maternal affections. Afterward Jean Paul became her ideal, and she is portrayed as Linda in his *Titan*. After much misfortune she went in 1820 to Berlin and there, totally blind, was sheltered by Princess Marianne. Her memoirs, under the title *Charlotte*, were republished at Stuttgart in 1879, and her letters to Jean Paul and his wife were edited by Nerrlich in 1882. Consult her novel *Cornelia* (1851), containing autobiographical elements, edited by her daughter Edda (1790-1874); Kopke, *Charlotte von Kalb* (Berlin, 1852), especially, Klarman, *Geschichte der Familie von Kalb auf Kalbsrieth* (Erlangen, 1902), and Ida Boy-Ed, *Charlotte von Kalb. Eine psychologische Studie* (Jena, 1912).

KALB, JOHANN, BARON DE (1721-80). An officer in the American Revolution. He was born at Huttendorf, Bavaria, entered the French army as a lieutenant in 1743, and became a captain in 1747 and a brigadier general in 1761. In 1768 he was sent by France on a secret mission to England's American colonies and in 1777 accompanied Lafayette to the United States and offered his services to Congress. In September, 1777, he received a commission as major general and until the spring of 1780 served in New Jersey and Maryland. In April, 1780, he was sent to join the Southern army as second in command to Gates, and, at the battle of Camden (q.v.) on August 16, was mortally wounded, dying three days later. Lafayette laid the corner stone of a monument to him at Camden in 1825, and a statue of him, by Ephraim Keiper, was unveiled at Annapolis in 1887. Consult Kapp, *Leben des amerikanischen Generals Johann Kalb* (Stuttgart, 1862), an English version of which was privately published at New York in 1870, and which is presented in condensed form in Greene's *The German Element in the War of American Independence* (New York, 1876). Consult also Smith, *Memoir of the Baron De Kalb* (Baltimore, 1858).

KALBE, käl'be. A town in the Province of Saxony, Prussia, situated 18 miles south of Magdeburg, on the left bank of the Saale. Spinning and weaving, and manufactures of stoves, paper, wool, and sugar, are carried on. Pop., 1900, 12,281. 1910, 12,088.

KALBECK, käl'bæk, MAX (1850-). Pseudonym, Jeremias Deutlich. A German dramatist, librettist, and critic. He was born and educated at Breslau. After a few years at Munich he was appointed keeper of the archives in the art museum of his native city and in 1880 went to Vienna, where he became associated with the *Wiener Allgemeine Zeitung*, the *Presse* (1883), the *Montags-Revue* (1890), and the *Neues Wiener Tageblatt*. His earliest published work was in the field of lyric: *Aus Natur und Leben* (2d ed., 1872); *Nächte* (2d ed., 1880); and *Aus alter und neuer Zeit* (1890). More important was his critical writing: *Neue Beiträge zur Biographie des Dichters Günther* (1879), on Wagner's *Nibelungen* (3d ed., 1883), and *Parsifal* (1883), *Wiener Opernabende* (1885), and *Opernabende* (1898). He adapted for the German stage Massenet's *Le Cid* and *Werther*, Verdi's *Otello*, and works of Smareglia, Mascagni, Smetana, and Tschaiikowsky; and wrote *Die Maienkönigin* (1888), *Das stille Dorf*

(1898), *Nubia* (1898), and a life of Brahms (1904).

KALCKREUTH, kälk'roit, LEOPOLD, COUNT (1855-). A German portrait, genre, and landscape painter. He was born in Düsseldorf, son of Stanislaus Kalckreuth (q.v.), and was a pupil of Struys at Weimar and of Benczur in the Munich Academy. From 1885 to 1890 he was a professor in the Weimar Art School, from 1895 to 1899 in the Karlsruhe Academy, and after 1899 in the Academy of Stuttgart. Although his work includes portraits, such as those of Count Eulenburg-Liebenburg and Lieutenant General von Grolmann, and landscapes, he is chiefly known as a painter of the German peasantry. He paints with a powerful and direct naturalism (q.v.), but with a more

among his pictures are: "The Fish Auction", "The Old Salt on the Beach"; "Schloss Klein-Oels," National Gallery, Berlin; "Old Age," Dresden Gallery, "Rainbow," New Pinakothek, Munich; "Thunder-Clouds" (1899), in the Karlsruhe Gallery.

KALCKREUTH, STANISLAUS, COUNT (1821-94). A German landscape painter, born at Kozmin (Posen). From 1840 to 1845 he was a lieutenant in the First Guards Regiment, stationed at Potsdam, where he was a pupil of Wegener. He then resigned from the service, and studied under Krause in Berlin and Schirmer at Düsseldorf. His earlier works obtained for him from Frederick William IV of Prussia an appointment as professor, and in 1859 he organized the art school which was opened at Weimar in 1860, remaining its director until 1876. Subsequently he established himself at Kreuznach and in 1883 at Munich. Extensive travels, particularly in the Alps and the Pyrenees, furnished the material for his numerous pictures of idealized mountain scenery. Although celebrated in their day for nobility of form and skillful light and shade effects, they now seem hard and dry. They prominently include "Lac de Gaube" (1855), "Canigai Valley" (1856), "Rosenlauri Glacier" (1878), all in the National Gallery, Berlin; "Lake in the Pyrenees" (1858), Königsberg Museum. The Orangery, near Potsdam, contains a series of 25 landscapes by him.

KALE (Scottish variant of *cole*, AS. *cōwl*, Icel. *kāl*, OHG *kōl*, *chōli*, Ger. *Kohl*, cabbage, from Lat. *caulis*, cabbage, Gk. *καυλός*, *kaulos*, stalk; connected with Lat. *cavus*, Gk. *κοῖλος*, *koilos*, hollow), or **BORECOLE** (Ger. *Kohl*). A cultivated variety of *Brassica oleracea*, differing from cabbage in the open heads of leaves, which are used for culinary purposes and also as food for cattle. There are many subvarieties. Most of the kinds are biennial, like the cabbage, but some may be reckoned perennial, as the Milan kale (*chou de Milan*), and are frequently propagated by cuttings. Kale is much cultivated as a winter vegetable. The mode of cultivation nearly agrees with that of cabbage. For illustration, see Plate of CABBAGE.

KALE, SEA A vegetable grown for its edible shoots. See SEA KALE.

KALEEGE, ká-lěj', or KALIJ. A native name given to a group of rather small pheasants inhabiting the hills along the southern front of the Himalayan Range from Kashmir to Bhutan and thence through Burma and southern China and south to Siam and Annam. There are about a dozen species of the genus *Gemnaeus* (or *Euplocamus*), characterized by medium size, generally dark but richly glossy plumage, and

recumbent crests, with the sides of the head naked. The males have spurs. Horsfield's kaleege of Assam is the darkest and most typical. The white-crested and black-crested are well-known forms in northern India, much pursued by sportsmen; and the Chinese silver pheasant (*Gennæus nycthemerus*) is the most striking in appearance, as its upper plumage is white, ornamented with dark markings. It has long been reared in European parks. The most aberrant member is Swinhoe's kaleege (*Gennæus swinhoei*) of Formosa, while the most generalized form is the lineated kaleege (*Gennæus lineatus*) of southern Burma. The group is of especial interest as illustrating the rather rare phenomenon of feral hybridization, this occurring in a widespread fashion in Burma, between the above-mentioned Horsfield's and Chinese silver and the lineated kaleege. Consult Beebe, *Zoologica*, vol. i, no 17 (New York, 1914). See PHEASANTS, and Plate of PHEASANTS.

KALEIDOSCOPE, kă-lî'dô-skôp (from Gk. *καλός*, *kalos*, beautiful + *εἶδος*, *eidōs*, form + *σκοπεῖν*, *skopein*, to view). An optical instrument invented by Sir David Brewster in 1816. It consists of a tube containing two plane mirrors placed lengthwise along the axis and hinged together along one edge, so as to make with each other an angle which is an aliquot part of 180°. One end is supplied with an eyeglass, and the other is closed by two glass plates, at a small distance from each other, and between which are placed little fragments of glass or other colored objects. The eye looking into the tube perceives these objects multiplied as many times as the angle which the reflecting planes make with each other is contained in the whole circumference of a circle, and always symmetrically disposed. The slightest shaking of the instrument produces new figures, and it is not only a pleasing toy, but has been used to suggest designs and patterns for carpets, wall papers, and other fabrics.

KALEND BRÜDER. See CALAND.

KAL'ENDS (Lat. *kalendæ*, abbrev. *kal.*, or *k.*, from *calare*, Gk. *καλεῖν*, *kalein*, to summon; connected with OHG. *holôn*, Ger. *holen*, AS. *gehalian*, Eng. *hale*; not akin to Eng. *call*). The Romans made a threefold division of the month into Kalends, Nones (*Nonæ*), and Ides (*Idus*). The Kalends always fell upon the first of the month, in March, May, July, and October, the Nones fell on the seventh, the Ides on the fifteenth; in the remaining months, the Nones came on the fifth, the Ides on the thirteenth. The Kalends were so named because it was an old custom of the college of priests on the first of the month to summon (or assemble, *calare*) the people to inform them of the festivals and sacred days to be observed during the month; the Nones received their name because they were the ninth day before the Ides, reckoned inclusively (cf. Lat. *nonus*, ninth). The derivation of *Idus* is uncertain. This threefold division also determined the reckoning of the days, which were not distinguished by the ordinal numbers first, second, third, etc., but as follows: those between the Kalends and the Nones were termed "the days before the Nones"; those between the Nones and the Ides, "the days before the Ides"; and the remainder, "the days before the Kalends" of the next month. Thus, since the Ides of January were on the thirteenth of that month, a Latin writer would term the next day the "nineteenth before

the Kalends of February," reckoning inclusively, i.e., reckoning in both the fourteenth of January and the first of February. January 31 was termed *pridie Kalendas Februarias* (the day before the Kalends of February); January 29 was called, by the inclusive reckoning explained above, "the third day before the Kalends of February." There was, in Roman reckoning, no "second day before the Kalends of February." Similar terms were employed, of course, in all the other months.

For the expression *ad Kalendas Græcas*, see GREEK KALENDS. The Roman Kalends and the Ides were often appointed as days for payment of rent, interest, etc. See CALENDAR. Consult Gildersleeve-Lodge, *Latin Grammar* (Boston, 1894), and Allen and Greenough, *New Latin Grammar* (ib., 1903).

KALERGIS, kă-lër'gēs, DEMETRIUS (1803-67). A Greek soldier and statesman, born on the island of Crete. He was educated at St. Petersburg and afterward studied medicine in Vienna and Paris. Upon the outbreak of the Greek revolution in 1821 he went to Greece, distinguished himself in the War of Independence, and was taken prisoner by the Turks. He was very active in the revolution of 1843 and was general and adjutant of King Otho, but resigned in 1845 and was forced to leave the country. He went to London, where he remained until 1848. Unsuccessful in his attempts at stirring up another revolution in Greece, he went to Paris in 1853. In 1854 he was made Minister of War in the Mavrocordatos ministry, but fell into disfavor and resigned. In 1861 he was sent as Ambassador to Paris and took an important part in the negotiations which obtained the Greek throne for George of Denmark from the Bavarian dynasty.

KALE SULTANIE, kă-lă' sul-tā'nā-ñ'. A town of Asiatic Turkey. See CHANAK KALESSI.

KALEVALA, kă'lă-vă'lă. See FINNISH LANGUAGE AND LITERATURE.

KALEVIPOEG, kă-lă-vă-pēg (Esthon., son of Kalev). The representative epic poem of the Esthonians. Like the Finnish *Kalevala*, this epic is based upon popular songs, which were collected by Krutzwald (1857-59) in the form in which they are now known. Unfortunately the material used by the editor was destroyed, and it is impossible to determine how much of the poem is the real product of folk fancy. The text, with German translation, is found in *Kalewipoeg, eine estnische Sage*, translated by Reinthal (Dorpat, 1857-61). Consult Kirby, *Hero of Esthonia and Other Studies*, vol. i (London, 1895).

KALGAN, kălgăn' (Mongol, barrier), or in Chinese *Chang-kia K'ow*, from the name of the gate in the Great Wall near by. A walled city in the Chinese Province of Chihli (or Pechili), situated about 130 miles northwest of Peking, a short distance south of the Great Wall; lat. 40° 50' N, long. 114° 54' E.; 2810 feet above the level of the sea (Map: China, K 3). Lying on the main route across Mongolia from Peking to Kiakhta in Siberia, it is a very important centre of the overland tea trade in which many thousands of camels are employed. Kalgan is also the point where trade is diverted west to Shensi and Kansu. It is connected by rail with Peking. It does an immense business with the Mongols. Its chief product is soda. Like all great trading cities of China, its suburbs are quite extensive. Pop. (est.), 70,000,

including a number of Russian merchants and several missionaries. The valley in which it stands is well cultivated and contains many populous villages.

KALGUYEV, kâl-gû'yêv. An island in the Arctic Ocean. See KOLGUYEV.

KALHANA, kâl'hâ-na. A Sanskrit author, famous as having written the chronicle of the kings of Kashmir, known as *Rājataranginī* (q.v.).

KALI, kâl'ê (Skt. *kālī*, black). 1. One of the names of Parvati, especially in southern India and Bengal. Under this title she is represented as of hideous aspect, four-armed, with bloody and protruding teeth and tongue, wearing a necklace of skulls, girded with a serpent and standing on the body of her husband Siva. She has a famous shrine (Kali Ghat) near Calcutta. She is worshiped with bloody sacrifices, sometimes of human beings. Kali is the goddess of epidemics, particularly of cholera. (See THUG.) 2 In the story of Nala and Damayanti, the personification of the die, who caused Nala to lose all his possessions in the game of dice with his brother Puskara.

KALICH, kâl'ish, BERTHA (1874-). An American actress, born at Lemberg in Galicia. She studied singing at the Lemberg Conservatory, made her début in Yiddish comic opera in 1890, sang in Yiddish at the Bucharest National Theatre in 1891, and first appeared in New York in 1894. She first played in English at the American Theatre in 1905 in the title rôle of *Fédora*. Subsequently she starred in *Monna Vanna* (1905); *The Kreutzer Sonata* (1908); *Sapho and Phaon* (1907); *The Watch* (1910); *A Woman of To-Day* (1910); *The Light of St Agnes* (1912); *Rachel* (1913).

KALIDASA, kâl'ê-dâ'sâ. The name of the greatest dramatic and lyric poet of India and one of the foremost poets of the world. He is best known to Western fame as author of the beautiful play *Sakuntalâ*, but he is entitled to lasting renown also through his other poetical works. The precise date at which he lived is subject to much discussion. Hindu tradition places him as early as the first century B.C., but most Occidentals have found reasons for believing that he lived as late as the sixth century A.D., although the tendency at present is to place him earlier than this rather later date, but not so early as the traditional date. The whole question is connected with the era of King Vikrama, or Vikramaditya, in whose time he flourished and at whose court in Ujjain he was one of the "nine gems." Legends regarding Kalidasa are still preserved at this ancient city, which was once a famous capital and literary centre in King Vikrama's Augustan age. See VIKRAMA; UJJAIN.

As a dramatist, Kalidasa was the author of three plays. The most famous of these, *Sakuntalâ* (Recognition of Sakuntala by the Ring), aroused the interest of literary Europe and an enthusiastic panegyric from Goethe when it was first translated by Sir William Jones in 1789. The second play, *Vikramorvaśī*, is a dramatic and romantic episode of the rescue of a nymph by the heroic king with whom she falls deeply in love. Less important is the third drama, *Mâlavikâ and Agnimitra*, the incident of a king's love for a dancing girl who turns out to be a princess in disguise. Kalidasa's lyrical masterpiece is the *Mêgha-dûta* (Cloud Messenger), in which a cloud is made the envoy of

an absent lover to his distant sweetheart. The *Ritu-samhâra* is a poem on the changes of the Indian year. Two artificial poems were also composed by this gifted Sanskrit poet: the *Kumâra-sambhava* (Birth of the War God), in 18 cantos, and the *Raghuvamśa* (Line of Raghu), in praise of the lineage of the great hero Rama, Prince of India (See the articles under these titles.) There are also some other poetical compositions ascribed to Kalidasa, but they are probably not genuine or are of doubtful authenticity.

The literary merit of Kalidasa's work is unquestioned. His artistic form is masterful; his fancy is rich and luxuriant, and his feelings true and tender.

Bibliography. For details regarding Kalidasa's date and life, consult: Bhao Daji, "On the Sanskrit Poet, Kâlidâsa," in the *Journal of the Bombay Branch of the Royal Asiatic Society* (Bombay, 1860); Huth, *Das Zeitalter des Kâlidâsa* (Berlin, 1892); Sevratne, *Life of Kalidasa* (Colombo, 1901); Beekh, *Ein Beitrag zur Textkritik von Kâlidâsas Meghadûta* (Berlin, 1907); Ray, "Age of Kalidasa," in *Journal of Asiatic Society of Bengal*, vol. iv (Calcutta, 1908). Editions and translations of Kalidasa are numerous; consult the list given for the dramas by Schuvler, *Bibliography of the Sanskrit Drama* (New York, 1906). More recent editions are: Foulker, *Kâlidâsa. A Complete Collection of the Various Readings of the Madras Manuscripts* (4 vols., Madras, 1904-07); Pansikar, *Kumârasambhava*, with the commentary of Mallinâth and Sitârâm (5th ed., Bombay, 1908); Cappeller, *Sakuntala, kurzere Textform mit Anmerkungen* (Leipzig, 1909); Hultzsch, *Meghadûta*, with the commentary of Vallabhadeva (London, 1911). The *Sakuntalâ* alone has been rendered into more than a dozen different modern languages. Among the English versions may be mentioned those by Sir William Jones, *Sacountalâ, or the Fatal Ring* (Calcutta, 1789, London, 1790, 1870); Monier-Williams, *Sakuntalâ, or the Lost Ring* (6th ed., London, 1890); Edgren, *Shakuntalâ, or the Recovered Ring* (New York, 1894). For a good bibliography of Kalidasa's lyric and narrative poems, with a discussion of his date, see Macdonell, *History of Sanskrit Literature* (London, 1913).

KALIDE, kâl'ê'de, THEODOR (1801-63). A German sculptor, born at Königshütte, Silesia. He was a pupil of Schadow and afterward of Rauch. His groups of figures and animals combined are the most successful of his works; they include "Child and Swan" (for the Schlossgarten in Charlottenburg), and his masterpiece "Bacchante on a Panther," in the National Gallery, Berlin. He also carved the "Dying Lion" on the Scharnhorst Monument in Berlin.

KALIJ. See KALEEGE.

KALILAH (kâl'ê'lâ) AND DIMNAH, dîm'nâ. See BIDPAI.

KALINGA, kâl'ing'gâ. A powerful head-hunting tribe inhabiting the Kalinga subprovince of northern Luzon. A part of the tribe has been Christianized and now closely resembles its neighbors in the Cagayan valley. Another part is still almost unknown, and its members have been, until recent years, tree dwellers. Excellent work in iron is done in some of the villages, while a crude agriculture is practiced throughout the belt. In physical type, language, culture, and beliefs they seem more

closely related to the Tinguian people of the Abra than to the Igorot, who live to the south See PHILIPPINE ISLANDS.

KALINNIKOV, ká-lín'í-kóf', WASSILI SERGEVICH (1866-1901). A Russian composer, born at Voina (Government of Orlov). From 1884 to 1892 he attended the music school of the Philharmonic Society at Moscow, where he studied under Ilyinsky and Blaraberg. During the season of 1893-94 he officiated as conductor of the Italian Opera at Moscow. Symptoms of consumption caused him to resign and take up his residence in the Crimea, where he devoted himself entirely to composition. His untimely death at Yalta, on Jan 11, 1901 (O. S., Dec 29, 1900), deprived Russia of one of her most gifted and promising composers. His works comprise two symphonies, in A and G minor; two symphonic poems, *The Nymphs*, *Cedar and Palm*; two *intermezzi*; a *suite* for orchestra, incidental music to A. Tolstoy's *Tsar Boris*; *Russalka*, a ballad for soli, chorus, and orchestra; a prologue to the unfinished opera *1812*; a string quartet, piano pieces, songs.

KALISCH, ká'lish, DAVID (1820-72). A German humorous poet. He was born at Breslau, became a collaborator on Oettinger's *Charivari* at Leipzig in 1846, and in 1848 assisted in the founding of *Kladderadatsch*, the famous political comic journal of Berlin. His farces are very popular in Germany, and a collection of his songs has been published in the *Berliner Leierkasten* (1857; n s, 1863). Consult Ring, *David Kalisch* (Berlin, 1873).

KALISCH, ISIDOR (1816-86). An American Jewish rabbi, leader of the radical and reformed party. He was born at Krotoschin, Prussia, studied at Berlin, Breslau, and Prague, and in 1849 came to the United States. He worked in Cleveland, Milwaukee, Indianapolis, Detroit, Leavenworth, Newark, and Nashville, and spent his last years in Newark (1872-86). Kalisch attained prominence in theological circles by his *Wegweiser für rationelle Forschungen in den biblischen Schriften* (1853), by his criticism of Leeser's English version of the Bible, and by his attack on *Jewish Belief in a Personal Messiah*. He was active as a translator, publishing *Nathan the Wise* (1869), *Sepher Yezirah* (1877), Munz's *History of Philosophy among the Jews* (1881), and *Ha-Tapnach*, from a Hebrew version of a pseudo-Aristotelian tract, as a Talmudic *bach* *or* *commentary* and as a poet in German and Hebrew. Of his poems, the best known is *Schlachtgesang der Deutschen*, written in his student days.

KALISCH, MARCUS (1828-85). An English biblical critic, born at Treptow in Pomerania and educated in Berlin and at Halle. He left Germany in 1849 because of his sympathy with the rising of the previous year, went to England, became secretary to Rabbi N M Adler and tutor to the Rothschild family. His great work was the uncompleted commentary on the Pentateuch, including *Exodus* (1855), *Genesis* (1858), *Leviticus* (1867-72). He also published a *Hebrew Grammar* (1862-63); German poems under the title *Leben und Kunst* (1868); *Biblical Studies*: I, *Balaam* (1877); II, *Jonah* (1878); and a work entitled *Path and Goal* (1880), in which he attempted to bring together characteristic thoughts and sentiments of representatives of different religions.

KALISH, ká'lesh (Pol. *Kalisz*). The westernmost Government of Russian Poland, cover-

ing an area of 4377 square miles (Map: Russia, A 4). It is almost entirely flat and is watered chiefly by the Warta and the Proсна. The climate is moderate and healthful, and the soil fertile and on the whole well cultivated. Agriculture is the main occupation. The manufacturing industries are unimportant. The chief manufactures are liquors, sugar, textiles, paper, etc. Pop, 1897, 844,358; 1912, 1,245,200, of whom about 80 per cent were Poles, about 8 per cent Germans, and the remainder Jews and Russians. Capital, Kalish (q.v.)

KALISH. Capital of the government of the same name in Russian Poland situated in the low yet picturesque valley of the Proсна, near the Prussian frontier, 149 miles west-southwest of Warsaw (Map Russia, A 4). The grand monument erected by Nicholas I in 1841 in commemoration of the alliance of Alexander I and Frederick William III concluded there in 1813, and many valuable works of mediæval sacred art in some of its Roman Catholic churches, are the interesting features of Kalish. Distilling, milling, tallow melting, weaving of cloth, sugar refining, and the production of woollens, leather, and tobacco are its principal industries. There are several annual markets. Pop, 1904, 46,796; 1912, 52,562, chiefly Poles and Jews. Kalish is one of the oldest Polish towns. In 1706 the Swedes were defeated here by the Poles and Russians. Kalish was occupied by the Germans soon after the outbreak of the European War of 1914. It was used by them as a base for the later attack on Lodz (q.v.), during which it was the scene of some very severe skirmishing. See WAR IN EUROPE.

KAL'ISPEL, or **PEND D'OREILLE**, pán dō'rá'y'. A Salishan tribe, formerly holding the territory along Pend d'Oreille lake and river in Idaho and Washington. They formerly crossed the mountains annually to hunt the buffalo in the plains. Through the influence of the Jesuit missions established among them about 1844 by Father De Smet, they advanced rapidly in industry and civilization. The greater portion are now confederated with the Flatheads and Kutenai upon the Flathead reservation in Montana, while a few others are roving in northwestern Washington, the total population of the tribe being 564. See SALISHAN STOCK.

KAL'ISPELL. A city and the county seat of Flathead Co, Mont, 120 miles north of Missoula, on the Great Northern Railroad, and on Flathead Lake (Map Montana, B 1). It is situated in a region noted for its great natural scenic beauty, and contains a Carnegie library, a Government Weather Bureau Station, and a hospital. The city has spent considerable money in building boulevards to Glacier National Park, 37 miles distant, and automobile roads around the lake. The chief industries of Kalispell are farming, horticulture, lumbering, and mining. The water works are owned by the municipality. Pop, 1900, 2526; 1910, 5549.

KALIYUGA, ká'lē-yōō'gā (Skt., age of strife). In Hindu chronology, the fourth or last of the periods contained in a mahayuga or great yuga. (See YUGA.) It may be compared to the Iron age of classical mythology. It consists, according to Indian belief, of 432,000 solar-sidereal years and began Feb. 18, 3102 B.C. The relation of the four yugas being marked by a successive physical and moral degeneration of created beings, the kaliyuga is the worst of all

The Hindu followers of the Tantras interpret the kaliyuga as the age of Kali (q.v.), the terrible consort of Siva.

KALK, kälk. A town in the Rhine Province, Prussia, on the Rhine, opposite Cologne, with which it is connected by street railway. It has a pilgrimage church, a Gymnasium, and manufactures of machinery, boilers, electrical apparatus, chemicals, porcelain, steel plates, and agricultural implements. Pop., 1900, 20,606, 1905, 25,478. Kalk was a part of Deutz until 1867, when it became a separate community. In 1881 it was made a city and was taken into Cologne in 1910.

KALKAR, käl'kär, CHRISTIAN ANDREAS HERMAN (1802-86). A Danish theologian. He was the son of a Jewish rabbi and was born in Stockholm, but accepted Christianity in 1823 and became a Danish pastor and author of many books, of which the following on missions may be mentioned in German translation *Die evangelischen Missionsbestrebungen in unseren Tagen* (1867), *Geschichte der romisch-katholischen Mission* (1867), *Geschichte der christlichen Mission unter den Heiden* (2 vols., 1879-81). He also wrote on linguistic and biblical subjects and took part in the revision of the Old Testament section of the Danish Bible.

KALKAR, or **CALCAR**, JAN STEPHAN VON (1499-1546-50). A German painter of the Renaissance. He was born at Calcar in the Duchy of Cleves. Fleeing to Venice with the daughter of a Dordrecht landlord, he was there, in 1536-37, the pupil of Titian, whose manner he adopted so thoroughly that his works are difficult to distinguish from his master's. Subsequently he went to Naples, where he became acquainted with Vasari, who bestows high praise on him, and where he died. His rare portraits, very delicate in feeling, excellent in drawing, and colored in a clear, warm, and somewhat reddish tone, justify the favorable testimony of Vasari. His best authenticated example is the Cologne Councilor Melchior von Brauwiller, in the Louvre. Other examples are in the Berlin Museum; the Pitti Gallery, Florence (two ascribed to Morone); the National Gallery, London, and at Padua. During his residence in Venice Jan Stephan designed the admirable illustrations for the famous work of Vesalius, *De Humani Corporis Fabrica* (1543).

KALKAS, käl'káz, or **KHALKHAS**. A people dwelling in northeastern Mongolia, forming one section of the eastern . . . They number some 250,000 and according to Haddon are typical nomads of the steppes. Consult Haddon, *The Races of Man and their Distribution* (London, 1910).

KALKBRENNER, kälk'brén-nēr, FRIEDRICH WILHELM MICHAEL (1788-1849). A German pianist, born while his mother journeyed from Cassel to Berlin. He was taught music by his father, a composer of contemporary popularity, and later studied at the Paris Conservatory, where he won first prizes in 1801. At Vienna he studied under Clementi and . . . made many successful concert . . . went to London and England, living in London from 1814 to 1823, after which he settled in Paris. In the latter city he became a partner in the Pleyel piano factory. Kalkbrenner was a pianist of exceptional technique, but his interpretations lacked depth and emotional power. As a pioneer in the modern methods of using the pedals, in the independent development of the fingers

and wrists, and especially in the use of the left hand, he was of lasting importance. He composed many pianoforte pieces, of which the only ones of modern value are his *études*.

KALKOWSKY, kal-köf'ské, ERNST (1851-). A German mineralogist, born at Tilsit and educated at Leipzig. He traveled widely, studying geology and mineralogy, in 1886 became professor at Jena and director of the mineralogical museum, and in 1894 professor in the Dresden School of Technology (in 1898 also director of the royal mineralogical museum). He wrote *Die Gneissformation des Eulengeburges* (1878), *Elemente der Lithologie* (1886), and many valuable contributions on mineralogy, crystallography, and geology.

KÁLLAY, kól'li, BENJAMIN VON (1839-1903). An Austro-Hungarian statesman. During his youth he made an extensive trip through the Near East and became thoroughly acquainted with the conditions existing there. From 1869 to 1875 he was Consul General at Belgrade and soon urged a vigorous Oriental policy for Austria and the Slavic countries. He was departmental chief in the Foreign Ministry in 1879, acting Minister of Foreign Affairs in the interval between the death of Haymerle and the appointment of Kalnoky, and in 1882 became Minister of Finance and charged with the reconstruction of Bosnia and Herzegovina after their occupation. This office he filled with great ability till his death, a period of 21 years. He wrote a *History of the Serbs* (1877, in German, 1878) and on Russia's policy in the East (1878 and in German the same year).

KALM, kálm, PEHR (1716-79). A Swedish botanist and traveler, born in Angermanland and educated at the universities of Abo and Upsala. A friend of Linnæus, who recommended him to the Swedish government, in 1748 he was sent to North America for the purpose of making investigations in natural history. He remained abroad three years and on his return to Sweden published an account of his travels under the title *En resa til Norra Amerika* (3 vols., 1753-61, new ed., 4 vols., 1904 et seq.). Translated into English by J. R. Forster, this appeared as *Travels into North America* (3 vols., 1770-71; 2d ed., 1772). It was also published in German, French, and Dutch. In 1752 Kalm became professor at Abo. The genus *Kalmia*, indigenous to North America, was named for him.

KÁLMÁN, kal'mán. A king of Hungary. See KOLOMAN.

KALMAR, kal'mär, or **CALMAR**. The capital of Kalmar Län, Sweden, situated on the Kalmar Sound, opposite the island of Öland, and about 200 miles south-southwest of Stockholm (Map Sweden, F 8). It is built partly on the mainland and partly on two small islands. It has a public park and several fine promenades and is regularly built. The most notable building is the seventeenth-century cathedral, built by Nicodemus Tessin in the style of the Italian Renaissance; on a peninsula outside the city stands the famous Kalmar Castle, a square building with five towers, the chamber of King Eric XIV, and an historical museum. It dates from the twelfth century, was considered the strongest fortification in Scandinavia during the Middle Ages, and was the scene of many important historic incidents. Kalmar has a seminary and a school of navigation and is the seat of a bishop. Industrially it has progressed slowly, the principal articles

of manufacture being matches, tobacco, and paper, but it has a good harbor, with shipyards, and a lively foreign and coastal trade. Pop., 1901, 12,715; 1911, 15,796. Kalmar is a very old town and figured in the wars between the Danes and Swedes. In 1397 the treaty, brought about by Queen Margaret, the daughter of Waldemar III, establishing the Kalmar Union, by which the crowns of Denmark, Norway, and Sweden were to remain united under one sovereign, was concluded here.

KALMIA, kál'mi-á (Neo-Lat., named in honor of Pehr Kalm). A genus of North American plants of the family Ericaceæ, consisting mostly of evergreen shrubs, generally with corymbs of beautiful red, pink, or white flowers, the corollas of which resemble a wide shallow bell. They delight in a peat soil. *Kalmia latifolia*, the mountain laurel or calico bush, ranges from New Brunswick to Louisiana, occupying large tracts on the Alleghany Mountains. It grows to the height of 30 feet, and the wood is very hard. The leaves are poisonous to many animals, and the honey of the flowers possesses noxious



KALMIA.

properties. A decoction of the leaves, it is claimed, has been used with advantage in cutaneous diseases. *Kalmia angustifolia*, sheep laurel, sheepkill, lambkill, or wicky, is a common species from Newfoundland to Georgia. Its leaves are narrower and are pale or whitish underneath, its flowers smaller and more crimson than those of the previous species. It possesses the same properties as the foregoing. *Kalmia hirsuta*, a dwarf species, occurs in the pine barrens from North Carolina to Missouri. There are about six species in North America and one in Cuba. See Plate of FLOWERS.

KALMUCKS, or **CALMUCKS** (Russ. *Kálmick*, Tatar *Khalimak*, renegade). A west-

ern branch of the Mongol race, inhabiting chiefly the eastern part of Tibet around Koko-nor and East Turkestan, the western part of the Russian Government of Astrakhan, and the Province of the Don Cossacks. According to the Russian census of 1897 (the latest) there were in Russia 190,648 people speaking the Kalmuck language. The majority of them were living in south-eastern Russia, viz., in the Kalmuck Steppe of the Government of Astrakhan, in the territories of Don and Tersk, and in the northern part of the Government of Stavropol. They are generally divided into four tribes: the Khoshots, found chiefly around Koko-nor and in the Kalmuck Steppe along the right bank of the Volga, in the Government of Astrakhan; the Dzungars, once inhabiting Sungaria (named after them), which they left after the conquest of that province by China in the eighteenth century; the Dorbots, found chiefly in the Kalmuck Steppe and the Province of the Don Cossacks; and the Torgots, formerly the chief Kalmuck tribe in Russia, of which, however, only a small portion has remained, the majority having returned to Chinese territory in 1771. In his pure state the Kalmuck is short of stature but stocky, with a large head covered with straight black hair, a flat round face with narrow, slanting eyes, high cheek bones, and a flat nose with round nostrils. The complexion is swarthy, and the chin is covered only with a scanty growth. In height the Kalmucks average 1.650 meters, and their cephalic index, or ratio of head width to head length, is 86.7. The Kalmucks of Russia are Buddhists excepting a small number of Christians and Mohammedans. They are nomadic in spite of the numerous attempts on the part of the Russian government to convert them into agriculturists. They live in tents (*kibitkas*), which are grouped into *aymaks* and *uluses*, the former being governed by elected and the latter by hereditary chiefs. Prior to the reforms of 1892 the lower classes were tributary to the hereditary chiefs, but in that year all class privileges were abolished, and the Kalmucks were placed directly under the rule of the Russian government, whose authority, however, is manifested only in the exaction of an annual tax of six rubles per *kibitka*. The Russian government appoints a *sama*, who is the chief of the Russian Kalmucks and has his headquarters in Bazar, a Kalmuck city on the Volga near Astrakhan. The Kalmucks of the Province of the Don Cossacks are gradually being assimilated and are subject to the same military obligations as the Cossacks. The Khoshots first made their appearance in European Russia in the seventeenth century, and were joined in the following century by the Torgots after their expulsion from Sungaria. In 1771 the Kalmucks living east of the Volga (mostly Torgots), partly provoked by the oppressive treatment of the Russian government and partly in the hope of reconquering Sungaria, started eastward to the number of 169,000 and reached Sungaria after eight months of indescribable hardships, resulting in the loss of over one-half of their number. Finding Sungaria still occupied by Chinese troops, they surrendered to the Chinese government and were established in East Turkestan. The language of the Kalmucks is a branch of the Mongol-Uraltaic family. The Kalmucks possess written laws and a literature which consists chiefly of myths, poems, and historical narrative. The

epic poem *Dshangariade* was translated into German by Golshtinski (St. Petersburg, 1864). A collection of folk tales was translated into German by Tülg in 1857 (Leipzig, 1866). The Société Finno-Ougrienne recently published a French translation of the *Kalmükische Marchen* by G. J. Ramstedt (Helsingfors, 1909). Consult: Bergman, *Nomadische Streifereien unter den Kalmücken* (4 vols., Riga, 1804-05); Wenjukow, *Die russisch-asiatischen Grenzländer* (Leipzig, 1876); Howorth, *History of the Mongols*, vol. i (London, 1876).

KÁLNOKY, kál'no-kí, GUSTAV, COUNT (1832-98). An Austro-Hungarian statesman, born at Lettowitz, Moravia. He entered the diplomatic service in 1854 and was attached to the legations at Munich, Berlin, and London. In 1871 he was temporarily in charge of the Austrian Embassy at Rome, and from 1874 to 1879 he was Minister to Copenhagen. In 1880 he was made Ambassador to St. Petersburg. In the following year he took the post of Minister of Foreign Affairs of Austria-Hungary, made vacant by the death of Baron Haymerle. His policy was directed towards strengthening the friendly relations with Russia. In 1882 he was instrumental in bringing Italy into the Triple Alliance (with Austria and Germany) on the basis of the territorial integrity of the three countries. In 1890 the highest Italian order, Santissima Annunziata, was conferred upon him. He resigned his post in May, 1895, in consequence of a conflict with the Hungarian Premier, Baron Bánffy, regarding ecclesiastical affairs in Hungary and was appointed member for life of the Upper House. Consult *Memoirs of Francis Craspi*, vol. ii (London, 1912).

KALOCSA, kál'lo-shó. A grand commune of Hungary, situated 3 miles from the left bank of the Danube, 100 miles by rail south of Budapest (Map Hungary, F 3). It has an attractive cathedral with two large towers, an archiepiscopal palace with a library of 70,000 volumes and a herbarium, a Gymnasium, a teachers' seminary, and an astronomical observatory. Pop., 1900, 11,380; 1910, 11,738, mostly Magyar Catholics, who are chiefly engaged in the fisheries on the Danube and in the breeding of cattle.

KALOG, kál'og. The great Alaskan sculpin (*Myoxocephalus*), 1½ to 2½ feet long. See SCULPIN.

KALONG, kál'long (East Indian name). A fruit-eating bat. See FOX BAT.

KALOUSEK, kál'loo-shék, JOSEPH (1838-). A Bohemian historian, born at Wamberg. He was educated at Prague, where he became professor of Bohemian history. His works in Czech and German deal mostly with the history of Bohemian law, such as *Einige Grundlagen des böhmischen Staatsrechts* (1870); *Ceské státní právo* (Bohemian Public Law, 1871; 2d ed., 1892); and a treatise on the Bohemian law of inheritance (1894). More purely historical are *Behandlung der Geschichte Premysl Ottokars* (1874); *Karl IV* (1878). *Regni Bohemiae Mappa Historialis* (2d ed., 1894); *Documenta et Registra Civitatis Albar Aquæ* (1880). After 1886 he was editor of the *Archiv Cesky*, a periodical for Bohemian history.

KALPA, kál'pá (Skt., period of time, ritual, from *kalp*, to be fitting). In Hindu chronology, a day of Brahma, which, according to Indian belief, is a period of 4,320,000,000 years of mortals and measures the duration of the world

This kalpa consists of 1000 *mahâyugas*, or great ages, each of which is divided into four *yugas*, called, in chronological order, *Kṛta*, *Treta*, *Dvāpara*, and *Kali*. The *Kali* is the shortest and last *yuga* and comprises 432,000 solar years; the *Dvāpara* is double in length, the *Treta* triple, and the *Kṛta* quadruple. The golden age was in the *Kṛtayuga*, but in succeeding ages a degeneration took place, until the *Kaliyuga*, of which the present time forms a part. See KALIYUGA.

KALPA-SŪTRA, kál'pá sū'trā (Skt., ritual manual). In Vedic literature, the name of those Sanskrit works which treat of the ceremonial referring to the performance of a Vedic sacrifice. (See *VEDA* and *SŪTRA*, where books of reference are mentioned.) In Jaina literature it is the name of the most sacred religious work of the Jainas. (See JAINISM.) The author was Bhadra Bahu, and the work was composed apparently in the seventh century A.D. Consult Stevenson, *The Kalpa-Sūtra and Nava Tatra* (London, 1848); Jacobi, *The Kalpa-sūtra of Bhadrabahu* (Leipzig, 1879); Weber, *Sacred Literature of the Jains*, translated by Smyth (Bombay, 1893); Schubring, *Das Kalpa-sūtra, die alte Sammlung jainistischer Mönchsvorschriften*, containing introduction, text, translation, and glossary (Leipzig, 1905); Macdonell, *History of Sanskrit Literature* (London, 1913).

KALPI, kál'pá. See CALPEE.

KAL'SOMINE, or **CALCIMINE** (Lat. *calx*, limestone). A composition of zinc white and glue sizing mixed with water and applied as a finish to the plastered ceilings and side walls of rooms. By adding coloring matter any color desired may be produced.

KALTAG, kál'täg'. An Alaskan native village on the north bank of the Yukon River, with a population of 147 in 1910 (Map Alaska, G 3). It is the east end of the Kotzebue Sound portage, the land route from the valley to Nome and the Seward Peninsula.

KALTENBORN-STACHAU, kál'ten-börn-stäc'ou, HANS KARL GEORG VON (1836-98). A Prussian general and minister, born at Magdeburg. He was a member of the topographical corps in 1861, fought in the campaigns against Denmark and Austria, and served as major in the Franco-Prussian War. He was made a battalion commander in 1874 and a lieutenant general in 1888. In 1890 he succeeded Verdy as Minister of War and carried through successfully the programme of two years' service and an increase of the regular forces by 70,000. He retired in 1893.

KALTENBRUNNER, kál'ten-brün'nër, KARL ADAM (1804-67). An Austrian poet, born at Enns. He was long connected with the government printing establishment at Vienna. His poems in dialect are his best and include *Oberösterreichische Lieder* (1845-48). He also wrote *Die drei Tannen* (1862), a very successful drama. From manuscripts were published *Ob der Enns und Austria und Geschichten aus Oberösterreich* (1880). Consult Josef Wihan, *Karl Adam Kaltenbrunner als Mundartlicher Dichter* (Linz, 1904).

KALUGA, ká-lō'gá. A government of Great Russia, bounded by the government of Moscow on the north, Tula on the east, Orel on the south, and Smolensk on the west. Area, 11,942 square miles (Map Russia, F 4). It has a flat surface, and the soil is mostly sandy. The

chief river is the Oka, which traverses Kaluga for about 200 miles. Agriculture is the chief industry and hemp the chief agricultural product. The output of cereals is hardly sufficient to meet the domestic demand. Kaluga has vast forests, which are exploited to some extent. There are a number of mines producing iron ore and copper; phosphorite and china clay are also worked. The manufacturing industries are rapidly developing. The chief manufactures are paper, leather, spirits, hempseed and linseed oil, matches, and iron products. The commerce is also important and is carried on to a large extent through the Oka River. Pop., 1912, 1,430,400. Capital, Kaluga.

KALUGA. Capital of the Russian government of the same name, situated on the left bank of the Oka, 95 miles southwest of Moscow (Map: Russia, E 4). It has an Orthodox cathedral, numerous churches, a convent, and a theological seminary. There are extensive manufacturing establishments of leather, sailcloth, wax candles, and hempseed and linseed oil. The commerce is of considerable importance and is carried on mostly with St Petersburg and the Baltic ports through the Oka, the Volga, and the Neva. Pop., 1889, 40,500, 1905, 51,939; 1911, 54,894. During 1859-68 the town was the residence of Shamył when a political prisoner.

KAMA, ká'má. A river of Russia, the principal affluent of the Volga. It rises in the eastern part of the Government of Vyatka, flows at first north, and then, passing into the Government of Perm, turns southwest and generally maintains that direction down to its confluence with the Volga, about 40 miles south of Kazan (Map: Russia, H 3). Its total length is 1170 miles, and it is navigable from the mouth of the Visherka, 760 miles. Its principal navigable tributaries are the Visherka, Tchušovaya, and Byelaya from the left and the Vyatka from the right. In the spring the Kama increases to several times its ordinary width, flooding the adjacent country. The Kama is very rich in fish, especially salmon. It is ice-free for over 200 days in the year. The traffic is very extensive, the principal article of trade being timber. The Kama is connected by a canal with a tributary of the Dvina, thus forming a part of the great waterway connecting the Caspian with the White Sea.

KĀMA, or **KĀMĀDĒVA,** ká'má-dá'vá. The Hindu Cupid, or god of love. He was the son of Brahma, according to some Sanskrit writers, or of Dharma, Virtue, according to others. On one occasion when trying to tempt Siva, who was undergoing extraordinary acts of asceticism, Kāma was reduced to ashes by a flashing gleam from the third eye of the enraged god. (See SIVA.) This is one of the reasons why Kāma is known as "the limbless god" in Hindu poetry. His wife Rati (voluptuousness) was so grieved at his loss that Siva became touched by her sorrow and promised that Kāma should be born again as the son of Krishna and Rukmini. The child was now called Pradyumna, another name for Cupid. Kāma is armed with a bow made of sugar cane; it is strung with bees, and its arrows, five in number, are blossoms of flowers which overcome the five senses. His banner is decorated with a fish, and he rides on a parrot or a sparrow, the symbol of voluptuousness. Consult: Dowson, *Hindu Mythology* (London, 1879); Wilkins, *Hindu Mythology* (ib., 1900);

Macdonell, *History of Sanskrit Literature* (ib., 1913).

KAMAKURA, ká'má-kō'rā (Jap., sickle cache, or storehouse). A seacoast village in Japan, 12 miles south of Yokohama, in a valley inclosed by hills, with entrances from each point of the compass (Map: Japan, A 2). It was founded in the seventh century A.D. Yoritomo, the famous general, who became Shogun in 1185, made it his capital, and it remained for nearly 400 years the political centre of Japan, the residence of most of the shoguns, and the scene of much bloodshed and unrest. Having so often suffered by fire and civil war, it has little to-day to attest its bygone greatness. It had ceased to be a town of any importance long before Iyeyasu conquered the Kwanto and fixed his residence at Yeddo (Tokyo). It is now a place of great resort for its natural beauties, its still large number of famous relics, and its Shinto and Buddhist shrines. One mile distant stands the famous bronze image of *Dai-Butsu* (Great Buddha), 49 feet, 7 inches high, cast in the year 1252 A.D. and visited annually by thousands of tourists, both native and foreign.

KAMA'LA, ká-mā'lā, or **KAMEE'LA,** ká-me'la (Hind. *kamila*). A medicine fairly efficient against tapeworm. It consists of the orange-colored powdered glands and hairs from the capsules of *Mallotus philippinensis*, a small tree of the order Euphorbiaceae, which grows wild in Abyssinia, Australia, eastern China, southern Arabia, and India.

KAMAL-UD-DIN ISMA'IL ISFAHANI, ká'māl-ud-dēn ēs'mā-ēl ēs'fa-ha'nē (?-1237). A Persian poet. He was born at Isfahan, the son of Jamal-ud-Din Abd-ur Razzak, himself a poet of some merit, and was carefully educated. Not only talented, but wealthy, Kamal-ud-Din was noted for generosity and public spirit until his confidence was abused by those whose benefactor he had been. He became misanthropic, and, assuming the garb of a Sufi, he retired to a hut in the suburbs of Isfahan. Here he won the esteem of those by whom he was surrounded, and when the army of the Mongol Uktai Khan, the son of Genghis Khan, seized the city, the poor concealed their treasures in a well in the courtyard of Kamal-ud-Din's hermitage. A young Mongol accidentally discovered this fact, and, in the attempt to force the poet to give yet more money, Kamal-ud-Din was tortured to death, writing, according to tradition, a quatrain of expostulation on his wall with his own blood. He was the author of a treatise on the bow and of other works, but his fame rests on his *Divān* (edited in lithograph at Bombay), which comprises eulogies of his patrons, as well as ghazals and quatrains. Selected quatrains have been translated into English verse by Gray and Mumford in their *Hundred Love-Songs of Kamal-ud-Din of Isfahan* (New York, 1904). Consult Browne, *Literary History of Persia* (New York, 1906).

KAMBĀLU, kām-hā'lōo, **KAMBALUC,** **KANBALU,** **CĀMBALU,** **CAMBĀLECH** (Mongol *Khanbaligh*, the Khan's city). Various forms of the name of the capital of China during the Mongol or Yuen dynasty, founded by Kublai Khan. It was captured by Genghis Khan in 1215; in 1264 it became the residence of Kublai and continued to be the capital until 1368, when the Mongols were driven out by Hung-wu (q.v.). It corresponded in part to

that portion of Peking which is known as the Tatar City. It was visited and described by Marco Polo and other Europeans in the thirteenth century and was the archiepiscopal seat of Friar John of Montecorvino. Consult Henry Yule, *Cathay and the Way Thither* (Hakluyt Society, London, 1866), and Marco Polo, *Travels* (New York, 1904).

KAMCHATKA, kām-chat'ká. A peninsula at the eastern end of Siberia, extending in a southerly direction between Bering Sea and the Sea of Okhotsk from lat 51° N to about 60° N. It is about 700 miles long and varies in width from 70 to 250 miles (Map Asia, S 3). Area, 104,433 square miles. The northern part is an extension of the great northern lowland of Eurasia, the tundra. The remainder of the peninsula is chiefly mountainous—physically an extension of the Stanovoi Mountains, but of different origin. The central ridge does not extend through the entire length of the peninsula, but only to about lat 57° N. East of the central ridge is the volcanic chain. The highest point of the peninsula is the extinct volcano Itchinskaya (16,920 feet). There are known to exist 12 active volcanoes in Kamchatka, all east of the central ridge, and 26 extinct volcanoes, also mostly in the eastern part of the peninsula. The highest of the active volcanoes are the Klutchevskaya (over 16,000 feet) and the Great Shivelyutch (over 10,000 feet). The mountains are clothed in snow, which gives rise to glaciers. The southern part of the central ridge is composed chiefly of granites, syenites, porphyries, and crystalline slates, while in the north Tertiary sandstone and volcanic rocks are most prominent. The volcanic origin of the peninsula is also manifested by the numerous hot springs. The rivers of Kamchatka mostly take their rise in the central chain and flow either into Bering Sea or the Sea of Okhotsk. An exception is presented by the river Kamchatka (325 miles long), which flows northeast through a valley between the central range and the volcanic chain, and then turns eastward, emptying into Bering Sea. While the annual average temperature is very low, the winters are not very severe. The climate of the western part of the peninsula is perceptibly colder than that of the eastern part, the difference being due to the floating ice and cold currents of the Sea of Okhotsk. The annual average temperature at Petropavlovsk (on the east coast in about lat. 53° N.) is about 36°, ranging from about 54° in July to 18° in January. In the valleys of the interior the range is somewhat greater. The precipitation is very abundant, and winter lasts for about nine months. Kamchatka, notwithstanding, has a rich flora. With the exception of the tundras in the north, the surface is covered with extensive forests, both coniferous and deciduous. The grasses are characterized by unusual height. The fauna differs somewhat from that of the mainland. The chief wild animals include the bear, the fox, the sable, the ermine, etc. Along the coasts are found the fur seal, the walrus, and many varieties of fish. Of minerals, Kamchatka has native copper, iron, and sulphur—none of them worked. The principal occupations of the inhabitants are fishing and hunting, all attempts at agriculture having practically failed on account of the unfavorable climatic conditions. Fish is the staple of the peninsula. The commerce is controlled by a trading company, and most of the imports come

from the United States. Barter trade prevails almost exclusively outside of Petropavlovsk, the capital. The population, 7270 in 1900, is composed of Kamchadales, Koryaks, Tchukchis, and Russians. The Kamchadales are found in the central and southern parts of the peninsula. They are about 4000 in number and speak a language regarded by some authorities as standing almost by itself. Physically they belong to the Siberian section of the Mongolian race and are small-statured but strongly built. The Kamchadales are fishermen and hunters. Of the appearance, manners, and morals of the Kamchadales, the earlier writers have transmitted no very pleasing record; but Erman (1833, 1871) and Kennan (1870, 1879) praise their hospitality, honesty, and good behavior. Their musical and dramatic talent was noted by Steller in the latter part of the eighteenth century. Their native religion was a well-marked shamanism. The Kamchadales are becoming more and more Russianized, and the religion of most of them is now nominally the Orthodox. Like many other Siberian peoples, they are by no means so near disappearance as is commonly supposed. The Koryaks and the Tchukchis are found chiefly north of 57° and still profess shamanism to some extent. The Russians are found in Petropavlovsk, which has the best roadstead of the peninsula, Verkhne-Kamchatsk and Nizhne-Kamchatsk, in the valley of the Kamchatka River, and a few other settlements. The Russians first came into Kamchatka at the end of the seventeenth century and founded a number of settlements at the beginning of the nineteenth century. Consult *Petermanns* (Gotha, 1891); De Benyovsky, *Memoirs and Travels*, translated by Nicholson (New York, 1893); Hamilton, "Kamchatka," in *Scottish Geographical Magazine*, vol. xv (Edinburgh, 1899), with bibliography; R. J. Bush, *Reindeer, Dogs, and Snowshoes* (New York, 1871); George Kennan, *Tent Life in Siberia* (ib., 1910). See KORIAKS, LAMUTS, TCHUKTCHI.

KAME. The name given to low hills composed of glacial sands and gravels arranged in stratified order. Kames frequently occur in the vicinity of the terminal moraines that mark the retreat of the continental ice sheets of the Pleistocene period. They were formed probably by the streams which issued from the edge of the ice and which deposited their burden of mud and sand along the ice front. The subsequent retreat of the glacier has left them as more or less isolated hills and ridges which range from a few feet to 100 feet above the neighboring surface. See DRIFT, GLACIAL PERIOD.

KAMEHAMEHA, ká-mā'hā-mā'hā. The name of several kings of the Hawaiian Islands.—KAMEHAMEHA I, called NUI (the Great) (1736-1819), was the first King of all the Hawaiian Islands. For the details of his reign, see HAWAIIAN ISLANDS.—KAMEHAMEHA II, called LIHOLIHO (1797-1824), has also been fully treated under HAWAIIAN ISLANDS.—KAMEHAMEHA III, called KAUIKEAOULI (1813-54), succeeded his brother Kamehameha in 1824. While under the influence of William Richards (q.v.) he issued in 1840 the first written Hawaiian constitution, which was replaced in 1852 by a more perfect instrument. Kamehameha III was repeatedly involved in difficulties with foreign countries. The British Consul, Richard Charlton, labored persistently to secure the annexation of the islands by his country, but ulti-

mately was disavowed by Great Britain. France also threatened the country, so that in 1851 the King placed his kingdom provisionally under the protection of the United States.—KAMEHAMEHA IV, called ALEXANDER LIHOLIHO (1834-63), ascended the throne in 1855. He was one of the most beloved of his dynasty. The country suffered during his reign on account of the impossibility of concluding a treaty of reciprocity with the United States. During his reign the English language was introduced in place of Hawaiian in the public schools.—KAMEHAMEHA V, called LOR (1830-72), was the last of his dynasty. He was reactionary and in 1864 promulgated a constitution of his own. See HAWAIIAN ISLANDS.

KAMEHAMEHA, ORDER OF. An Hawaiian order with three classes, in honor of Kamehameha I, founded in 1864 by Kamehameha V. Its insignia are a white enameled cross with gold rays surmounted by a crown. The device is *E Hookanala* (Be a man).

KAMEKE, ká'me-ke, ARNOLD KARL GEORG VON (1817-93). A Prussian general. He was born at Pasewalk, entered the army in 1834, and was Prussian attaché at Vienna from 1856 to 1868. He became colonel in 1861, major general soon after, and was chief of staff to the Second Army Corps in the Austrian campaign of 1866. During the Franco-Prussian War he fought as lieutenant general in command of the Fourteenth Infantry Division at Spichern and Gravelotte, captured a number of fortresses, such as Montmédy and Mézières, and had charge of the engineering operations around Paris. The former fort of Woippy near Metz was named after him. From 1873 to 1883 he was Minister of War.

KAMEN, ká'men. A town of Germany. See CAMEN.

KAMENETZ-PODOLSK, ká-me-nyéts' pódólsk'. Capital of the Russian Government of Podolia, situated on a peninsula formed by the Smotritsch, an affluent of the Dniester, 235 miles northwest of Odessa (Map: Russia, C 5). It is divided into two parts, one situated on an eminence and the other at the foot of the elevation. The city is the seat of an Orthodox and of a Roman Catholic bishop. The Roman Catholic Cathedral of SS. Peter and Paul, built in 1361, is surmounted by a minaret added by the Turks, who used the edifice as a mosque from 1672 to 1699. To the west of the town is the once strongly fortified castle, surrounded with massive castellated walls. The fortifications were razed in 1813. There are two theatres, an Orthodox and a Roman Catholic theological seminary, a monastery, and two convents. The commerce and manufactures are insignificant. Pop., 1912, 49,611, of whom nearly 50 per cent were Jews. Kamenetz-Podolsk was one of the principal fortresses of Poland. In the seventeenth century it was for a time in the possession of the Turks. In 1795, after the third partition of Poland, the town became Russian.

KAMENZ, ká'ménts. A town of the Kingdom of Saxony, Germany, situated on the Black Elster, 21 miles northeast of Dresden (Map: Germany, F 3). It has four fine churches, including one Wendish, a town hall with a library and collection of ecclesiastical antiquities, and a hospital dedicated to the memory of Lessing, who was born here in 1729. There is also a cloth-makers' school. The chief products of Kamenz are cloth, hats, printing machinery, ce-

ment, pottery, and glassware. Pop., 1900, 9726; 1910, 11,533.

KAMERUN, ká'me-rōon', or CAMEROON. A German protectorate on the west coast of Central Africa, bounded by Lake Chad on the north, French Congo on the east, French Congo and the Spanish Río Muni on the south, and the Bight of Biafra and Nigeria on the west (Map: Congo, Belgian, B 1). Area 305,000 square miles. The narrow coastal plain, about 200 miles long, is flat, partly swampy in the southern part. In the north the land rises to 13,000 feet in the volcanic mountain group of Kamerun. Between the coast region and the hinterland extends an elevated region from 90 to 125 miles in width, covered with impassable forests. The hinterland, or interior, which has not been fully explored, is a vast grass-covered plateau ranging in altitude from 2000 to 4000 feet and assuming a more mountainous character in the north towards Adamawa (q.v.), where it attains an altitude of some 9800 feet. The country is watered by many rivers flowing to the coast and, as a rule, interrupted by numerous rapids. The chief of these rivers include the Sanaga, draining the central part of the country and entering the ocean south of Duala; the Kamerun, which flows through the mountainous region of the same name and is joined at its mouth by the Mungo and a number of other streams, the Njong, south of the Sanaga; and the Djah, in the southwestern part of the colony. Along the coast lowland much rain, mostly in two seasons corresponding to our winter and summer, and a high temperature make a d'-h-a-r-d-l-y-l-i-f-e, especially for the foreigner. To the north, and the temperature, because of the altitude, is moderated, so that safer conditions of living exist.

The inhabitants of the interior, especially towards Adamawa, are well advanced in agriculture. They cultivate large farms of corn, tobacco, manioc, yams, etc. The European plantations are confined to the coast region and produce chiefly cacao, tobacco, coffee, and rice. Only the first two products are raised in sufficient quantities for export. In 1912 there were about 40,000 acres in plantations, of which about 25,000 acres were under cacao. The development of the colony has so far been very slow, although in natural resources Kamerun ranks probably first among German colonial possessions. One reason for this slow advancement is found in the lack of labor, and in the fact that German authority is hardly recognized beyond the coast region. The natives, who under ordinary circumstances would furnish the necessary labor, are reluctant to work on German plantations, on account of the cruelty manifested by individual planters. Another and more important reason is that the inhabitants of the hinterland, the most intelligent in the colony, are still tributary to the Emir of Yola, and their trade goes mostly to British Nigeria. The military forces maintained at present in the colony are not sufficient to establish German authority in the interior, and communication between the coast region and the interior is maintained only through the natives. In spite of these unfavorable circumstances the trade of the colony is growing, although, as in most German colonies, the imports are increasing at a faster rate than the exports. The chief exports are rubber, palm oil and kernels, ivory, cocoa, cola nuts, and tobacco. The imports consist largely of textiles,

food products, hardware, beverages, instruments, machinery, etc. The exports rose from \$882,017 in 1896-97 to \$5,500,000 in 1912, while the imports increased during the same period from \$1,403,190 to \$8,100,000. The chief seaport is the city of Duala, formerly known as Kamerun. The shipping amounted in 1912 to 1,733,000 tons, over one-half of which was carried in German vessels.

The colony is under the administration of a Governor appointed by the crown and assisted by a council of three representative merchants. There are four districts—Duala, Victoria, Edea, and Kribi. The seat of the government was removed, in April, 1901, from Duala to Buea. The military force of the colony consists of 1100 colored troops and 100 whites. The revenue, chiefly from customs, is about \$3,700,000, to which the German government adds about \$1,500,000 annually. Besides Duala and Buea, the chief settlements in the coast region are Victoria and Rio del Rey. The total length of railway in 1912 was 150 miles. Duala is connected by cable with Bonny in Nigeria and thus with Europe. The population of the colony is estimated at 3,650,000. The inhabitants of the coast region and forest regions belong to the Bantu (q.v.) race and consist of a number of tribes, among which the Dualla are prominent. The Dualla are engaged in trade and agriculture and do some wood carving. The inhabitants of the interior are Sudanese, intermingled with Fulah.

In July, 1884, several German merchants by treaty with the native chiefs of Duallaland obtained possession of that region, which they transferred in the same year to the German government. The boundary lines were fixed by treaties with Great Britain in 1885, 1886, and 1893, and with France in 1885, 1894, 1901, 1902, 1908, and 1911. Scandals in connection with maladministration and the oppression of natives were brought to light in 1906. Kamerun was invaded by a British expeditionary force during the European War of 1914, and several small towns were captured. See WAR IN EUROPE.

Bibliography. Various articles in the *Globus* (Brunswick, 1879 et seq.); Allan, *The Land of Duallas; Life in the Cameroons* (Newcastle, 1885); Reichenow, *Die deutsche Kolonie Kamerun* (2d ed., Berlin, 1885); Buchner, *Kamerun* (Leipzig, 1887); Schwarz, *Kamerun* (2d ed., ib., 1888); Hübler, *Zur Klimatologie von Kamerun* (Munich, 1896); Dominik, *Kamerun* (Berlin, 1901).

KAMERUN, kă'me-rōōn', or **CAMEROON**. A mountain group of Africa, considered to be the highest elevation on the west coast of that continent (Map: Congo, Belgian, A 2). It is situated in the western part of the German Protectorate of Kamerun, in lat. 4° to 4° 28' N. and long. 9° to 9° 30' E., and occupies an area of about 760 square miles. The mountains are of volcanic formation and reach, in their highest peak, Albertspitze or Fako, an altitude of 13,370 feet, where snow appears. The extinct volcanoes number about 28. The lowest slopes are inhabited and are covered with dense forests of palms and other trees.

KAMES, HENRY HOME, LORD. See HOME.

KAMICHI, kă-mě'chě. See SCREAMER.

KAMIMURA, kă'mě-mōō'ra, HIKONOJO, BARON (1849-1916). A Japanese admiral, born in Satsuma. He commanded a cruiser in the Sino-Japanese War of 1894-95, became vice

admiral in 1903, and on the outbreak of the Russo-Japanese War received command of the second Japanese squadron. On Aug. 14, 1904, he engaged the Russian Vladivostok cruiser squadron off Ulsan in Korea, sank the *Rurik*, and compelled the other two vessels to retreat to Vladivostok. (See RUSSO-JAPANESE WAR.) For his services he was made Baron and was decorated with the Grand Cordon of the Rising Sun and the First Class of the Golden Kite. Later he was promoted to be a full admiral (1910), commanded the first squadron, and in 1911 was made Supreme Military Councilor.

KAMINISTQUIA, kă'mi-nis-ti-kě'a. A Canadian river, rising southwest of Lake Nipigon, Ontario, flowing south and east into Thunder Bay, Lake Superior, at Fort William (Map: Ontario, H 8). On its course occur the Kakabeka Falls (q.v.). The Kaministiquia and its tributaries formed routes from the northwest by which Indians brought their furs to the traders.

KAM/LOOPS (confluence). An incorporated city and the capital of Yale District, British Columbia, Canada, situated at the confluence of the north and south branches of the Thompson River, 250 miles by rail northeast of Vancouver, on the Canadian Pacific Railway (Map: British Columbia, D 4). It was founded by the Northwest Fur Company in 1811; it was incorporated in 1892 and is the distributing centre of a large grazing, mining, hunting, and sporting district. It has lumber mills, a cigar factory, brewery, bottling plant, brickyard, cold-storage plant, railroad and machine shops, municipal water works, a fire department, park, and electric lighting plant. It also contains the district courthouse and jail, the land and registry offices of the Dominion and Provincial governments, a Roman Catholic convent, an old men's home, and a hospital, and is a favorite health resort. Points of interest in the vicinity are Kamloops Lake, an Indian village at the base of Paul's Peak (3570 feet), and mineral springs. Pop., 1911, 3772.

KAMLOOPS TROUT. A variety of the steelhead (*Salmo gairdneri*, var *kamloops*) found in Thompson River, Okanagan and Kootenay lakes, and other waters of southern-central British Columbia. See STEELHEAD.

KAMMERSEE. See ATTERSEE.

KAMPANERTHAL. See CAMPANERTHAL.

KAMPEN, kămp'en. A town of the Netherlands, Province of Overijssel, near the mouth of the Yssel, at the terminus of the Netherlands Central Railroad (Map: Netherlands, D 2). The old fortifications have been converted into pleasant walks, only the ancient gateways, one of them dating from the fourteenth century, being retained. The fourteenth-century church of St. Nicholas is regarded as one of the three best examples of mediæval architecture in Holland. The Roman Catholic church of St. Mary, built in the fourteenth century, and the town hall, restored in 1543, with library and art collection, are also notable. Among the educational institutions are a Dutch Reformed theological seminary, a Gymnasium, a school of design, and a military school. The town manufactures machinery, harness, paper, and bricks, engages in shipbuilding, and has a good trade in dairy products. Steamers run daily to Amsterdam, Deventer, Enkhuizen, and Zwolle. The town owns Kampen Island, the revenue from which practically pays all expenses of govern-

ment and relieves the people of taxes. Kampen was formerly one of the Hanseatic towns, with a flourishing commerce, which declined when sand filled up the mouth of the Yssel. Since the middle of the nineteenth century the river has been kept open by means of jetties, and the town is again prospering. Pop., 1900, 19,664; 1910, 19,745.

KAMPEN, kām'pen, NIKOLAAS GODFRIED VAN (1776-1839). A Dutch scholar and historian. He was born in Haarlem, was reared in Germany, made an extensive study of languages and literature, and was for a time connected with the editorial staff of the *Leidsche Courant*. In 1816 he was appointed professor of the German language in the University of Leyden, and in 1829 professor of the Dutch language and literature in the Amsterdam Athenaeum. He published: *Geschiedenis van de fransche heerschappij in Europa* (1815-23); *Beknopte geschiedenis der letteren en wetenschappen in de Nederlanden, enz.* (1821-26); *Geschiedenis der Nederlanders buiten Europa* (1831-33), and other works. Consult the biography by Muller (1840).

KAMPF, kämpf, ARTHUR (1864-). A German portrait, historical, and genre painter. He was born at Aix-la-Chapelle and studied under Janssen at the Dusseldorf Academy. At first regarded as the successor of Menzel in the field of historical painting, Kampf quickly developed strong individuality and turned to modern life for his material. His color is harmonious, but subordinate to his draftsmanship, which in power and sureness is his best quality. Ranking as one of the foremost portrait painters in Germany, he is especially known by his portraits of Emperor William II, a fine specimen of which was exhibited in the Metropolitan Museum, New York, in 1909. Among his historical compositions are: "Blessing the Volunteers of 1813," Karlsruhe Gallery; "Frederick the Great Speaking to his Generals," Dusseldorf Gallery; "A People's Sacrifice, 1813," Leipzig Museum. His other works include "Two Sisters," Ravené Gallery, Berlin, and "Benevolence," both exhibited at the Metropolitan Museum in 1909; "Before the Chapel of Kevlaer," Dresden Gallery; "Bridge Building"; mural paintings in the County Hall (Kreishaus) at Aix-la-Chapelle and in the New Royal Library at Berlin. Professor Kampf was elected president of the Berlin Academy and received great gold medals at Berlin, Dresden, and Barcelona.

KAMPF UM RÖM, kämpf um röm, EIN (Ger., A Struggle for Rome). The best-known novel by Felix Dahn (1876).

KAMPFHAUSEN, kämp'hou'zen, ADOLF (1829-1909). A German Protestant theologian, born at Solingen and educated at Bonn. In 1855, as private secretary to Bunsen, he assisted him in his great *Bibelwerk*. At the same time he was privatdocent at Heidelberg, and in 1863 he became professor of theology at Bonn. He was especially prominent in the revision of Luther's version of the Bible and wrote: *Das Lied Moses* (1862); *Die Hagiographen des alten Bundes übersetzt* (1868); *Das Buch Daniel und die neuere Geschichtsforschung* (1893); *Die berichtigte Lutherbibel* (1894); *Das Verhältnis des Menschenopfers zur israelitischen Religion* (1896); *The Book of Daniel*, a critical edition of the Hebrew and Aramaic text (1896).

KAMPFULICON (from Gk. κάμπυλος, *kampylos*, flexible + οὐλος, *oulos*, thick). A kind of

floorcloth, made of india rubber and cork. Powdered cork is heated and kneaded up with the caoutchouc and then made into sheets by passing through cylinder rollers heated with steam.

KAMPTZ, kām'ts, KARL ALBRECHT CHRISTOPH HEINRICH VON (1769-1849). A German statesman, born at Schwerin, Mecklenburg. He began his public life in the service of his native state, but in 1804 accepted a position as associate judge at the court of Wetzlar and thenceforth continued in the service of Prussia. He became widely known through the burning of his *Code of Police Law* by the students at the Wartburg Festival in 1817, and in 1820 he made himself universally disliked by the German Liberals because of his zeal in carrying out the reactionary policy of Prussia which followed the murder of Kotzebue. From 1832 to 1838 he was Minister of Justice. His works include: *Kodex der Gendarmerie* (1815), a number of works on Mecklenburg and Prussian law, including *Civilrecht der Herzogtümer Mecklenburg* (1805); *Aktenmassige Darstellung der preussischen Gesetzrevision* (1842); *Zusammenstellung der drei Entwürfe des preussischen Strafgesetzbuchs* (1846).

KAMTCHATKA. See KAMCHATKA.

KANĀDA, ka-nā'da (Skt., atom eater, from *lana*, atom + *ad*, to eat). A celebrated thinker of ancient India, founder of the atomic school, or Vaiseshika (from *viesha*, particularity) system of Hindu philosophy. His name seems originally to have been bestowed upon him as a nickname, but, if so, it has supplanted his real name. Besides this he was also dubbed Atom Devourer, Kapa-bhaksha, Kapa-bhu. According to some he was identical with the sage Kaśyapa, as holding the individuality of single spirits as distinct from the Supreme Spirit. Consult Macdonell, *History of Sanskrit Literature* (London, 1913). See VAISESHIKA.

KANAGAWA, kā'na-gi'wā (Jap., golden stream). A prefectural town of Japan, on the Bay of Tokyo, near Yokohama (Map: Japan, F 6). It is on the Tokaido, or East Sea Road, which connects Tokyo with Kyoto, and also on the railway. Pop., about 16,000. Its only importance is the fact that it was the official site of the treaty port, but, being on the great highway along which the great daimyos and their numerous armed retainers were daily passing (foreigners were unnecessarily exposed to their hostility and constant attacks), the Japanese government was much pleased when the foreign community moved "across the Strand" to Yokohama.

KANAKA, kā'nā-kā or ka-nāk'ā (Hawaiian, man). A term used at first by the white sailors and traders to designate the natives of the Hawaiian Islands, and later on all Polynesian slaves, contract laborers, etc. Some ethnologists (e.g., Peschel in 1874) employed the term to denote the Hawaiians, others (e.g., Quatrefages and Topinard in 1870-78) spoke of the "Kanaka or Polynesian race," using it in the widest sense. It is now in colloquial use in the sense of Polynesians generally; it is rarely used in the Pacific islands except in the French possessions, where *canacque* is the common designation of all the islanders regardless of race.

KANANUR, kā'nā-nōor, or **CANNANORE**. A municipal seaport and military station of the Malabar District, Madras, British India, 58 miles north of Calicut (Map: India, C 7). The town stands at the head of a bay with an an-

chorage 2 miles from the shore. Once a great mart, Kanauur has lost much of its importance. It manufactures cotton textiles. Besides pepper, grain, and timber, the neighborhood produces immense quantities of coconuts, which are largely exported northward. Kanauur has been a British possession since 1783, when it was taken from Tippu Sultan. Pop., 1901, 27,811; 1911, 28,957.

KANARESE, kân'a-rêz'. The southwestern section of the Dravidian peoples of southern Hindustan. They number some 10,000,000 and inhabit the table-land of Mysore, a part of southern Bombay, and the Kanara county on the southeast coast north of the Malayalam. They are one of the civilized Dravidian peoples, possessing an alphabet derived from the ancient Hindu and a written literature, some of whose chief works go back to the twelfth century. Their language, like the Tamil and Telugu, is a member of the Dravidian group of tongues, and it serves as the vernacular of over 10,000,000 persons. See DRAVIDIANS.

Bibliography. There are several Kanarese poetical anthologies, one was published by Kittel (M. A. 1874). A sketch of the Kanarese literature will be found in the introduction to the grammar of the language issued by Rice, *Nāga Varmā's Karnātaka Bhāṣa-Bhāṣana* (1884). Consult also B. L. Rice, "The Kanarese Authors," in *Royal Asiatic Society Journal*, vol. xv (n. s., London, 1883), A. S. Mud-Bhatkal, *Modern Kanarese Grammar Explained in English* (Karwar, 1899); Ferdinand Kittel, *Grammar of the Kannada Language in English* (ib., 1903), British Museum, Department of Oriental Printed Books and Manuscripts, *Catalogue of the Kannada, Badaga, and Kurg Books*, compiled by L. D. Barnett (ib., 1910). For a lexicon, consult Ferdinand Kittel, *Kannara-English Dictionary* (M. A. 1874), and J. Bucher, *Kannara-Engl. Lexikon* (ib., 1899).

KANARIS, ka-nā'ris, KONSTANTINE (1790-1877). A native of the island of Ipsara, in the Greek Archipelago, distinguished for his exploits in the Greek War of Independence. In June, 1822, he blew up the Turkish admiral's ship in the Strait of Chios to avenge the cruelties which the Turks had perpetrated on the Greeks of that island. In November of the same year he burned the Turkish admiral's ship in the harbor of Tenedos. His native island of Ipsara having been ravaged, he took revenge (August, 1824) by burning a large Turkish frigate and some transport ships which were carrying troops to Samos, and thereby saved Samos from the calamity which Chios and Ipsara had undergone. In 1825 he formed the bold design of burning the Egyptian fleet in the harbor of Alexandria, where it lay ready to carry troops to the Peloponnesus, and only an unfavorable wind prevented his success. In 1827 he represented his island in the National Legislature and later was appointed to important commands by Capo d'Istria. In 1848 he was Minister of Marine and president of the cabinet, took part in the revolution of 1862, and held office repeatedly under the new King, Prince George of Denmark, his last official position being that of president of the cabinet and Minister of Marine from June, 1877, till his death, on September 15.

KANAUJ, kā-nouj', or **KUNNOJ**. An ancient city of British India, capital of the per-

gunnah of the same name, in the District of Farrukhabad, 65 miles north-northwest of Lucknow, on the Kali Nadi, about 5 miles above its junction with the Ganges. At present the place is little more than an expanse of ruins covering a semicircle at least 4 miles in diameter. The few poor people now in the city live in mud huts built up against the old walls. The present town is about 1 mile long and ½ mile broad, with a ruined fort of no great antiquity. The most remarkable buildings are two handsome Mohammedan mausoleums, erected in honor of Bala Pir and his son about 1650. Kanauj (formerly Kānyakubja) was formerly one of the greatest as well as the oldest of Indian cities, and Lower Bengal is said to have been Hinduized as early as the ninth century B.C. by five Brahmans from this place, from whom all the Brahmans in the Lower Provinces now claim to trace their descent. Until about the twelfth century A.D. it continued to be the chief city of India, despite its capture both by Mahmud of Ghazni and Muhammad of Ghuri. In 1193 it was attacked by Muizz-ud-Din Muhammad ibn Sam, Sultan of Delhi, and of the house of Ghuri, who defeated the King of Kanauj and overthrew his monarchy. After this the history of the place consists only of a succession of disasters.

KANAWHA (kā-ng'wa) **RIVER**. A large river of West Virginia. Its head stream, the New River, is formed by the confluence of three streams in Ashe County, northwestern North Carolina, whence it flows north-northeast and then northwest through the western part of Virginia, where it breaks through the Blue Ridge and Alleghenies (Map. West Virginia, C 3). After crossing the Gauley River in Fayette Co., W. Va., it takes the name of Kanawha (formerly Great Kanawha), flows for about 100 miles through a picturesque region abounding in coal, salt, and iron, and joins the Ohio River at Point Pleasant, after a total course of about 400 miles. Its drainage area is 20,211 square miles. By means of a system of movable and fixed dams, begun by the Legislature of Virginia in 1821 and continued since 1873 by the United States government, at a cost, up to 1913, of about \$5,600,000, slack-water navigation has been made possible throughout its course.

KANAZAWA, kā-na-zā'wā. The capital of the Province of Kanazawa, Japan.

KANBALU. See KANBALU.

KAN'CHIL (East Indian name). The smallest of the deerlets or chevrotains (q.v.) of the family Tragulidae, which inhabits the Malayan Islands, and especially Java, whence its name (*Tragulus javanicus*). It is less than a foot high, and is grayish reddish on the sides, the underparts are white, a dark stripe running up the breast. It lives in the thickets of the jungle or rocky places. During the day it is in hiding and displays such astuteness generally that the Malays have a saying, "cunning as a kanchil."

KAN'DAHAR', or **CANDAHAR**. The capital of the province of the same name in Afghanistan, situated in the southeastern part of the country, about 300 miles southwest of Kabul (Map Afghanistan, M 7). This, the largest city of Afghanistan, lies at an altitude of nearly 3500 feet. It is well built, with straight and wide streets and fine buildings, surrounded by a strong wall with bastions and a citadel. It has a good water supply. There are more than 175

mosques and 1600 bazars. The chief products are silk and felt. The exports are wool, cotton, asafoetida, fruit, silk, and horses. In the vicinity are situated numerous gardens yielding large quantities of fruit. The trade is chiefly with British India. Pop. (est.), 30,000. Kandahar is supposed to have been founded by Alexander the Great. For 13 centuries little is known of the place. Down to 1747, when the native rule was permanently established, Kandahar, with brief and precarious intervals of independence, was held in turn by Tartary, India, and Persia. Kandahar was occupied by the British in 1839, and after the fatal retreat of the army from Kabul in 1842 it was successfully defended by General Nott. It was again entered by the British in 1879. In the following year it was besieged by Ayub Khan. General Roberts performed a memorable march from Kabul and relieved the town, which he entered on Aug. 31, 1880. On the following day he dispersed the army of Ayub Khan.

KANDAVU, kán'da-vōō'. One of the Fiji Islands (q.v.).

KANDY, kán'dē. A fortified town in the centre of Ceylon and former capital of the island, situated 82 miles by rail northeast of Colombo (Map: India, D 8). It lies around an artificial lake on the top of a hill and contains many ancient monuments, including the palace of the former King of Kandy, a building of large dimensions and a fine sample of native architecture, now partially occupied by the government. There are a number of ancient temples, among which the finest is the *Daladé Málógáwa* (the Temple of the Tooth), named so on account of the supposed tooth of Buddha which it contains. This temple also deserves attention for its ancient manuscripts, written chiefly in Pali and Sanskrit. A number of splendid modern buildings have been erected, including the Victoria Jubilee Commemoration Building. In the vicinity are situated the famous botanical gardens of Peradenia. Pop., 1901, 26,519, 1911, 30,148. Consult: Cave, *The Ruined Cities of Ceylon* (London, 1900); G. J. A. Skeen, *Guide to Kandy, with Maps: A Handbook of Information* (Colombo, 1903); T. B. Parnatella, "Sumptuary Laws and Social Etiquette of the Kandayans," in *Royal Asiatic Society, Ceylon Branch, Journal*, vol. xxi (ib., 1909).

KANE. A borough in McKean Co., Pa., 94 miles by rail east by south of Erie, on the Pennsylvania, the Baltimore and Ohio, and the Kane and Elk railroads (Map: Pennsylvania, D 3). It is a resort, attractive for its elevated site (2210 feet), healthful climate, and good hunting and fishing. It contains the Kane Summit Hospital. Kane has large glassworks, bottle works, lumber mills, and manufactures of brush handles, saws, cutlery, screen doors and windows, etc., and is situated in a region rich in oil and natural gas. Pop., 1900, 5296, 1910, 6626.

KANE, ELISHA KENT (1820-57). An American Arctic explorer. He was born in Philadelphia, received an academic training in that city, entered the University of Virginia, but later pursued a course in medicine at the University of Pennsylvania, graduating in 1842. In July, 1843, he was appointed an assistant surgeon in the United States navy and sailed for China on the *Brandywine* with Caleb Cushing, United States Minister. At Peking he acted as legation surgeon, and after an expedition to the Philip-

pine Islands practiced privately in China. He served on the west coast of Africa in 1846-47 and returned to the United States in time to take part in the Mexican War, in which he distinguished himself. In May, 1850, he sailed for the Arctic Ocean with the first expedition sent out by Henry Grinnell (q.v.), of New York, under the command of Lieut. E. J. De Haven, in search of Sir John Franklin (q.v.). The two ships, the *Advance* and the *Rescue*, in company with eight English ships searched the region around Lancaster Sound. On their return the *Advance* and *Rescue* were beset in the middle of Wellington Channel. They drifted 1050 miles, into Baffin Bay, and after eight months extricating themselves from the ice, returned to New York in September, 1851. With the idea that great results might be accomplished by a polar expedition scientifically planned, Kane began to interest others. Henry Grinnell and George Peabody came to his aid, and on May 30, 1853, he sailed northward in command of the *Advance*, accompanied by Dr. Isaac I. Hayes as surgeon. Kane sailed with a double object—to search for Sir John Franklin and to extend northward the discoveries of Inglefield (q.v.). He proceeded directly up Smith Sound to lat. 78° 43' N., and he wintered in Van Rensselaer harbor, from which point he and Dr. Hayes conducted sledge expeditions, as a result of which much geographical knowledge was obtained. One of these sledge journeys led to the discovery of the famous Humboldt glacier (79° 12' N.) In June, 1854, another party reached Cape Constitution, in lat. 80° 35' N., from which open water was seen. In May, 1855, the *Advance* was abandoned, and the party after a boat journey of 1200 miles reached Upernavik, whence they returned to the United States with Lieutenant Harstene, U. S. N., and a squadron sent for Kane's rescue. The expedition resulted in adding more to the knowledge of the Arctic regions than any single expedition previously undertaken, and Dr. Kane received medals from Congress, the Royal Geographical Society, and the Société de Géographie. He published *The United States Grinnell Expedition* (1854) and *The Second Grinnell Expedition* (1856). Consult William Elder, *Biography of Elisha Kent Kane* (Philadelphia, 1857); also for domestic life, W. . . . Fox, *Love Life of Dr. Kane* (New York, 1866); A. W. Greely, *American Explorers and Travelers* (ib., 1894).

KANE, JOHN KINTZING (1795-1858). An American jurist and politician, born in Albany. He graduated at Yale in 1814, studied law, and after 1817 practiced in Philadelphia. In politics he was at first a Federalist, but soon became a Democrat, was an ardent supporter of Jackson, and vigorously attacked the United States Bank. He served on the commission of 1832 to settle French indemnities. In 1846 he was appointed District Judge of Pennsylvania. Kane was an able judge, but his commitment of Passmore Williamson for contempt under the Fugitive Slave Law made him very unpopular. He was from 1856 until his death president of the American Philosophical Society. He was the father of Elisha Kent Kane (q.v.).

KANE, PAUL (1810-71). A Canadian artist and traveler. He was born in Toronto, was educated at Upper Canada College, and studied art in the United States (1836-40), and afterward in Rome, Florence, and other Italian cities. He returned to Toronto in 1845, and then trav-

eled extensively in the Hudson Bay Territory and the Northwest, sketching and making notes on the physical appearance and habits of the various Indian tribes with whom he came in contact. In 1848 he returned to Canada with a valuable collection of Indian curiosities and nearly 400 sketches, from which he made many oil paintings. A collection of the latter was purchased by the Canadian government for the Parliament Buildings at Ottawa, and another collection is in a private gallery in Toronto. Kane embodied many of the results of his experiences and studies in the following books: *Incidents of Travel on the North-West Coast* (1855); *Notes of a Sojourn among the Half-breeds and Walla-Walla Indians* (1856), *The Chinook Indians* (1857); *Wanderings of an Artist* (1859).

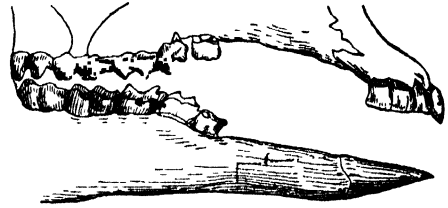
KANEKO, *kā'nā-kō*, KENTARO, VISCOUNT (1853-) A Japanese statesman, born at Fuknoka and educated at Harvard University, where he graduated in 1878. He became Secretary of the Japanese Senate (1880), private secretary to Marquis Ito, then premier (1885), and, after traveling abroad to investigate constitutional systems, Chief Secretary of the House of Peers (1890). In 1891 he was sent to Switzerland as a delegate to the International Law Conference. Subsequently he was appointed Vice Minister (1894) and Minister (1898) of Agriculture and was Minister of Justice in 1900-01. On the outbreak of the war with Russia in 1904 he came to the United States in an unofficial capacity to arouse American sympathy for the Japanese cause. In this he was eminently successful. To his intervention, as agent for Marquis Ito, was generally ascribed the successful outcome of the peace negotiation at Portsmouth in 1905. (See RUSSO-JAPANESE WAR; KOMURA.) Kaneko had been made Baron in 1890, after the war he was created Viscount, was decorated with the Order of the Rising Sun, First Class, and was appointed Privy Councillor. Harvard honored him with the degree of LL.D.

KANEM, *ka'nēm or kā'nēm'*. A former vassal state of Wadai, Sudan, occupying the territory along the north and east shores of Lake Chad (Map: Africa, F 3). Its area is estimated at from 27,000 to 30,000 square miles. Pop., about 100,000, consisting of Tibbus, Kanembus, Kanuris and Arabs. The chief settlements are Mao, east of the lake, and Mgigimi, at its northwest end. The State of Kanem was founded in the ninth century, became Mohammedan in the eleventh, in the twelfth extended from the Niger to the Nile, reaching south beyond Lake Chad. It declined, and became a dependency of the Kingdom of Bornu (q.v.). Kanem is now incorporated with the French Territory of Chad, founded in 1900.

KANGAROO'. Any one of several large marsupials. The name was given by Captain Cook, the navigator, to a big animal with a small head and fore limbs, but very large tail and hind limbs, secured by him at Endeavor River, on the northeast coast of Australia, in July, 1770. Although he distinctly says that "kangaroo," as he spelled it, was the native name, the word is apparently unknown to any of the now living aboriginal tribes. It has, however, passed into all European languages with very little change. When Captain Cook's specimens reached Europe, they were first described as monster jerboas, but Schreber recognized the relationship to the opossums, and called the

creature *Didelphys giganteus*. Very soon afterward (1791) Shaw created a new genus for the species and named it *Macropus*, in allusion to the very large feet, contrasted with the small fore limbs (hands), and thus has arisen the name *Macropus giganteus*, which designates the common gray kangaroo of Australia. With the settlement of that continent, and the increased knowledge of its fauna, the name "kangaroo" was extended to all similar animals until at the present time it is the popular designation for several score species of mammals occurring not only in Australia and Tasmania, but in New Guinea and a number of the smaller near-by islands. These species resemble one another so closely in most important characters that they are considered as a subfamily, the Macropodinae, of the family Macropodidae, the largest of the six families of marsupials.

Structure. The distinguishing anatomical features of the kangaroos are as follows. The dental formula is $i \frac{2}{1}, c \frac{0 \text{ or } 1}{0}, p \frac{2}{2}, m \frac{3}{3}$, the canine teeth being generally absent; the foremost upper incisors are the largest, there are



DENTITION OF A KANGAROO

well-developed eyelashes, the stomach is large and sacculated, like the large intestine, and there is a large cæcum, the first toe is wanting, while the second and third are very small and included in the skin of the fourth, which is very large and powerful, much larger than the fifth; forefeet with five digits, tail long, stout, and hairy; head small with elongated muzzle; ears long and ovate, pouch well developed, concealing the four teats.

Food and Habits. Kangaroos are entirely herbivorous and seem to replace, in the Australian region, the deer and antelopes, which are entirely wanting there. They are naturally timid and inoffensive and rely on the keenness of their senses and the rapidity of their flight for escape from their enemies. They often sit erect, supporting the body on the tripod formed by the tail and two hind limbs. In this position they are alert to see, hear, or smell, and when alarmed move off quickly by successive leaps, the force of which is derived from the powerful hind legs. Under ordinary conditions the distance of each leap rather exceeds the total length of the animal, but when in full speed, each leap may be three or four times the entire length, moreover, the leaps may exceed in height that of the animal when sitting erect. Most kangaroos live in open glades and upon plains, but some of the smaller species are forest lovers, and others frequent rocky places. When hard pressed by dogs, the larger species defend themselves by kicking or striking with the hind foot. The powerful claw of the fourth toe will cut a dog like a knife, and one blow, fairly delivered, will kill the average hound. Kangaroos have been, and are still, so constantly hunted

that in many districts they are now exterminated. In other districts they seem to be on the increase. They are hunted not only for the flesh, which is excellent eating, and the hides, which make valuable leather, but also on account of the damage which they do by their peculiar method of grazing. The big incisor teeth of the lower jaw clip the grass or leaves like a pair of shears. Thus, kangaroos nibble the grass and other plants much closer to the soil than sheep or cattle. Although not exactly gregarious, kangaroos are often seen in large numbers where satisfactory food is abundant. Under such conditions one or more of the old ones keep a sharp lookout for danger.

The number of young produced at a birth is usually one or two, but may be three. When born, they are very small (an inch or less in length), blind, naked, and entirely unable to help themselves. They are taken by the mother, with her lips, and placed in the pouch on a teat to which they firmly cling with the mouth, the windpipe being so arranged that swallowing and breathing do not interfere with each other. The young do not suck the milk, but it is pumped down their throats by the action of the muscles of the mother. In the pouch the young remain for weeks or even months, gradually increasing in size and assuming the adult form. As they mature, they occasionally leave the pouch, but they keep near the mother and return to her whenever danger threatens. At this time they are frequently seen with the head thrust out of the pouch in which they are being carried. In captivity kangaroos are gentle and timid, cases are known where they have been frightened to death. Unlike the opossum and other marsupials the kangaroo can be taught circus and other tricks.

Species. The best-known species of kangaroo is the one to which reference has already been made, the common or gray kangaroo (*Macropus giganteus*), also called boomer, forester, and old man. It is one of the largest species, an old male, when erect on his hind feet and tail, standing 7 feet high, but the females are only about two-thirds as large. The color is usually dull yellowish brown, paler beneath, darker on the tail, but the exact shade varies greatly, and generally the pelage has a distinctly grayish cast. The name "gray" kangaroo distinguishes it from an allied slightly larger form, the great red kangaroo (*Macropus rufus*), so called because the fur of the neck of the male is tinged with a carmine-like secretion. The latter species also differs from the common kangaroo in having the muffle entirely free from hair. There are numerous other species of this same genus, of which *Macropus brunni* deserves special mention. This species is remarkable for the fact that it is found farther north, thus nearer the equator, than most of the other members of the genus, its habitat being in the Aru Islands and Great Key, near New Guinea. The northernmost habitat of a *Macropus* is the island of New Ireland, northeast of New Guinea, where *Macropus browni* is found, while in the island of Misol, west of New Guinea and near the equator, there occurs another kangaroo (*Dorcopsis muelleri*), representing a Papuan genus, characterized by small ears, large naked muffles, well-developed canine teeth in the upper jaw, and other peculiarities of dentition. Another Papuan genus of great interest is *Dendrolagus*, which includes the tree kangaroos (q.v.). These curious little

kangaroos feed on bark, leaves, and fruit, and are found only in the forests of New Guinea. The hare kangaroos, found only on the grassy plains of Australia, form the genus *Lagorchestes* and are small, long-limbed, short-tailed creatures, which make "forms" like those of the hare. The rock kangaroos (q.v.) or rock wallabies of the genus *Petrogale* are also confined to the Australian mainland and differ very little from the smaller species of *Macropus*, but inhabit rocky regions and make their retreats in caves and holes. There are three species of kangaroo in which the tail terminates in a horny point, the use of which is still unknown. They are designated the spur-tailed kangaroos and constitute the genus *Onychogale*, confined to the Australian mainland.

Remains of kangaroos are found fossil in the Pleistocene strata of Australia, but they are mostly referable either to *Macropus* or *Petrogale*. Some of these were larger than any of the now living kangaroos. Three genera are known which have no living representatives, and of these *Palorchestes* is notable as the largest known member of the subfamily. Consult: J. Gould, *Monograph of the Macropodidae, or Family of Kangaroos* (London, 1841); Buch, *Wanderings of a Naturalist* (ib., 1865); Sir Joseph Banks, *Journal*, edited by Hooker (ib., 1896); B. Haller, "Ueber den Grosshirnmantel des Kanguruh (*Macropus rufus*) eine Erklärung für das Fehlen des Balkens," in *Heidelberg Akademie der Wissenschaften, Sitzungsbericht, Mathematisch-naturwissenschaftliche Klasse* (Heidelberg, 1911).

KANGAROO APPLE (*Solanum aviculare*). A plant, native of Peru, New Zealand, Australia, and Tasmania, in the two latter countries its fruit is called kangaroo apple and is used as food. When unripe, it is acid and produces a burning sensation in the throat, but when fully ripe, a condition indicated by the bursting of the skin, it is mealy and subacid. It is eaten raw, boiled, or baked, and is prized by the natives.

KANGAROO BEAR. The koala (q.v.).

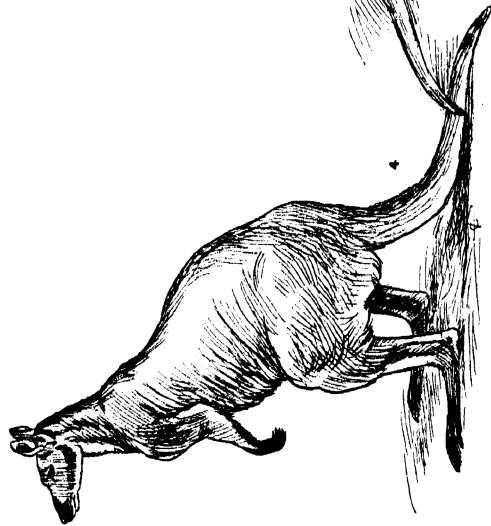
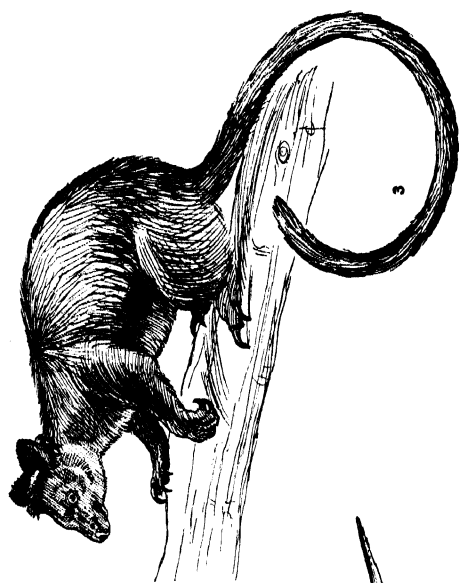
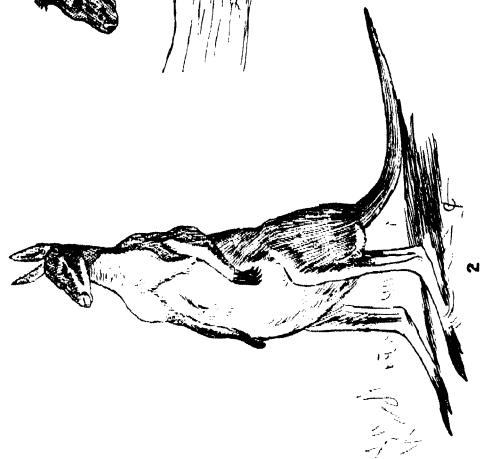
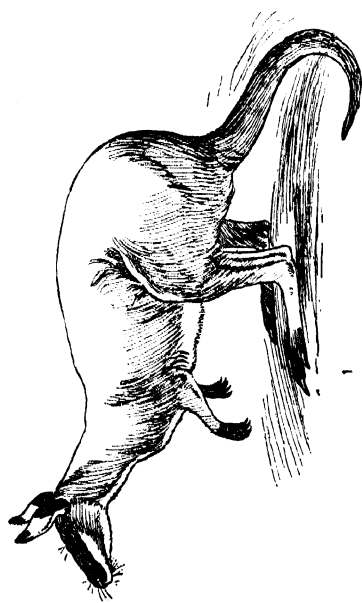
KANGAROO GRASS (*Anthisturia ciliata*). One of the most esteemed fodder grasses of Australia and cultivated in India. It attains a height of 3 feet, affords abundant herbage, and is much relished by cattle. The genus is allied to *Andropogon*. The awns are long and twisted. *Anthisturia gigantea*, *Anthisturia frondosa*, and *Anthisturia membranacea* are other Australian species to which the name "kangaroo grass" is given. They are all nutritious grasses and are considered valuable for pasture.

KANGAROO RABBIT. See HARE.

KANGAROO RAT. A rat (*Perodipus ordi*) of the arid southwestern United States, with very long hind legs and great leaping powers. It is a member of the large family Heteromyidae and is related to the jerboas. The present species is yellowish buff above, blackish on the rump, sides of nose, spot behind each ear, band across the thighs, and underparts white; tail very long and tufted. Length of body about 4¼ inches. It is an active, restless, nocturnal little creature, digging intricate burrows, and storing up large quantities of sunflower seeds and similar provender for winter. The name is applied in Australia to species of marsupials belonging to the genera *Potorous*, *Caloprymnus*, *Bettongia*, and *Hyppymnus*.

K'ANG-HI, käng'hé', or **K'ANG-HSI**, shé

KANGAROOS



1. PARRY'S WALLABY (*Macropus parryi*).
2. GREAT RED KANGAROO (*Macropus rufus*).
3. BLACK TREE KANGAROO (*Dendrolagus ursinus*).

4. BLACK WALLAROO (*Macropus robustus*).
5. BLACK-GLOVED WALLABY (*Halmaturus manicatus*).
6. YELLOW-FOOTED ROCK WALLABY (*Petrogale xanthopus*).

(lasting prosperity) (1655-1722). The second Emperor of the *Ta Tsing* (great pure) dynasty established on the throne of China by the Manchu Tatars, the first having been Shun-chih, his father. Shun-chih died in 1661, and K'ang-hi's reign, according to custom, begins to be reckoned in the following year. Being only eight years old, a regent was appointed. At 14 he assumed the reins of government and used the power vested in his hands with prudence, vigor, and success. Before he was 20, a great rebellion broke out, led by the Chinese Wu San-Kuei, and at one time the Emperor had left to him only the provinces of Chili, Honan, and Shantung. He was finally successful, aided by the death of Wu San-Kuei, and also by the powerful cannon manufactured for the Imperial armies by the Jesuits. He extended his dominion to Khokand, Badakhshan, and Tibet. He simplified the administration, increased the number of provinces to 18, and consolidated his power in every part of his vast dominion, and thus became more celebrated than almost any other modern Asiatic monarch. Personally he was well disposed towards Christianity and has been made known to all the world. The calendar was reformed in 1669 by the Jesuit Verbiest, and an Imperial census of China in 1701 gave the number of inhabitants as 105,000,000. He subdued many tribes, settled by treaty the northern frontier between China and Russia (1679), had the Empire surveyed by the Jesuit missionaries, and commerce with foreigners, the East India Company having been allowed to establish an agency in 1677. Christianity was officially recognized in 1692, but in 1698 the Pope decided against K'ang-hi, as to whether Chinese Christians might continue ancestor worship. This angered K'ang-hi, and in 1716 an edict banished all missionaries who disagreed with him. He was a great patron of both literature and art. Many large and important works were brought out under his own personal supervision. These included the great Imperial Dictionary of Chinese with a vocabulary of over 40,000 characters; a concordance to all literature, known as the *Pei-Wên-Yun-Foo*, in 110 thick volumes, two great encyclopedias, one of which, the *Ku-kin T'oo Shu-Ts'eh-Ching*, printed from movable copper type, is in 5020 volumes. Under his patronage and encouragement art flourished and attained a vigor and perfection that has never been approached since. His posthumous or temple name was Hwang-ti. Consult Rémusat, *Les empereurs asiatiques* (Paris, 1829), and Giles, *China and the Manchus* (Cambridge, 1912).

KANG-KAO. See CANCAO.

K'ANG-WA, käng'wä', **K'ANG-WHA,** or **K'ANG-HOA** (Jap., river flower). An island lying at the mouth of the Han River in Korea and very important as guarding the water approach to the capital, Seoul. For ages it was the place of refuge for the court during the many invasions of the country. Modern methods of warfare have made the island less valuable as a stronghold. As long as Korea was independent, the archives of the government, in duplicate, were kept at the island in a fortified monastery by Buddhist monks who were subsidized and acted as a sort of clerical militia. In October, 1866, the city of K'ang-wa was stormed and looted by the French under Admiral Roze in revenge for the execution some months previously of nine French Jesuit missionaries in

Seoul. The French marines attempting to storm the monastery, which was defended by 5000 Koreans, were driven back with great loss. In 1871 Admiral John Rodgers, with a United States squadron, having had his survey boats fired upon, landed a force of 759 men under command of Winfield Scott Schley (q.v.), which attacked and captured the five forts. On Sept. 19, 1875, the Koreans fired upon some Japanese marines, mistaking them for French and Americans. The next day the Japanese stormed the fort, and soon after Kuroda (q.v.) with a squadron of warships arrived off the island, and with Inouye (q.v.) secured the treaty by which the two nations entered into relations of peace and commerce. The island is rich in ancient monuments and very interesting to the student. On the headland above the forts stormed by the Americans the Koreans have erected tablets to the memory of their compatriots. Consult: Trollope, in the *Transactions of the Korean Asiatic Society* (Yokohama, 1901); Hamilton, *Korea* (New York, 1907); W. E. Griffis, *Corea, the Hermit Nation* (ib., 1911).

K'ANG YU-WEI, käng yoo'wä' (c.1858-). A Chinese scholar and reformer, born in Canton. He became a Chin-shih (doctor of literature), the highest in China, and was the author of a new commentary on the Chinese classics. He came under the influence of the missionaries and made himself acquainted through their books with the history and philosophy of Western nations and became the leader of the party of Reform. He had a large following among students in several provinces, who called him the Modern Sage. A book he wrote on modern Japan brought him to the attention of the Emperor Kwang-hsi. He was received in audience and immediately became the chief adviser to the Emperor and the guiding spirit of the reform movement of 1898. But K'ang and the Emperor attempted too much in the way of reform. The plot to seize and imprison the Emperor Dowager Tzu-hsi, which was necessary for the success of their plans, completely failed. Tzu-hsi gained the ascendancy and practically deposed the Emperor. A furious reaction set in against all reformers, many of whom were imprisoned or beheaded. K'ang, forewarned in time, managed to escape and fled to Hongkong, Singapore, and elsewhere. While in exile, he founded the Pao Huang Hwei (empire reform association), which aimed at reforming China along modern lines. This association spread to England and America, where it was visited and advised by its founder. K'ang played a prominent part in the revolution of 1911 which overthrew the Manchus, and he became one of the noted men of the new China.

KANITZ, kã'nits, **FELIX PHILIPP** (1829-1904). An Hungarian ethnologist and archaeologist, born at Budapest and educated at Vienna. He traveled through Germany, Belgium, France, and Italy, and after a trip to the South Slavic countries gave himself up almost entirely to the art and ethnology of Albania, Herzegovina, Servia, and Bulgaria. His more important writings are: *Die römischen Funde in Serbien* (1861); *Serbiens byzantinische Monumente* (1862); *Reise in Südserbien und Nordbulgarien* (1868); *Serbien* (1868); *Donau-Bulgarien und der Balkan* (3d ed., 1882); *Katechismus der Ornamentik* (5th ed., 1896); *Römische Studien in Serbien* (1892).

KANITZ, kã'nits, **HANS WILHELM ALEXAN-**

DER, COUNT VON (1841-1913). A German politician, born at Mednicken. He studied law at Heidelberg and Berlin and became a member of the Prussian Lower House in 1885 and of the German Reichstag in 1889. He became best known as a defender of protective tariffs and of agricultural interests and as the author of the *Law Kanitz*, a paternal measure enjoining on the government the purchase and sale of all imported cereals. This bill came up once in 1894 and thrice in 1895 and was defeated by heavy pluralities. He wrote: *Aphorismen über Getreidezölle* (1879), *Die preussischen Ostprovinzen und die Zollreform* (1880), *Die Festsetzung von Mindestpreisen für das ausländische Getreide* (4th ed., 1895).

KANIZSA, kō'nē-zhō, NAGY (big). A royal free town of Hungary, situated on the Kanizsa River, in the County of Zala, 136 miles by rail southwest of Budapest (Map: Hungary, E 3). It has a Piarist and a Franciscan cloister, a trade school, and a higher Gymnasium. There are a number of important distilleries. The town has a considerable trade in agricultural products and live stock. Pop., 1900, 23,978; 1910, 26,524, mostly Catholic Magyars.

KANIZSA, Ó (old). A grand commune in the County of Bács-Bodrog, Hungary, situated on the right bank of the Theiss, about 15 miles south-southeast of Szegedin (Map: Hungary, G 3). Tobacco, wheat, and millet are raised extensively in the vicinity. Stock raising and shipping are other occupations. Pop., 1900, 16,532; 1910, 17,018, mostly Catholic Magyars.

KANKAKEE, kân'kâ-kē'. One of the two rivers whose junction in Grundy Co., Ill., forms the Illinois River (Map: Illinois, K 3, and Indiana). It rises in English Lake, Starke County, north Indiana, and flows west-southwest to near the city of Kankakee, Ill., where it turns northwest, joining the Des Plaines River (qv) to form the Illinois. See *Twenty-second Annual Report of the State Geologist of Indiana, 1898*, pp. 55-65.

KANKAKEE. A city and the county seat of Kankakee Co., Ill., on the Kankakee River, 54 miles south of Chicago, on the Cleveland, Cincinnati, Chicago, and St. Louis, the Illinois Central, and the Chicago, Indiana, and Southern railroads (Map: Illinois, J 3). The river, broad and deep at this point, furnishes excellent water power, which is used for manufacturing purposes, as well as for generating electricity for city lighting and the operation of street railways. It is spanned by a fine bridge at this point. Some of the most important manufactures are plows, buggies, furniture, sewing machines, and iron beds. There are also carriage and wagon factories, grain elevators, stone quarries, a brewery, household furnishings and ornament works, brick and tile works, and establishments producing foundry and machine-shop products, wire, flour, mattresses, cigars, hosiery, pianos, etc. Kankakee has also considerable commercial importance as a distributing centre. The Kankakee State Hospital for the Insane, accommodating more than 3000 patients, is situated here. Other fine structures are the arcade, opera house, public library, high school, county jail, courthouse, St. Joseph's Seminary (founded in 1860), emergency hospital, conservatory of music, and Y. M. C. A. building. Electric and Riverview parks are the two principal pleasure grounds. At Bourbonnais Grove, a suburb 3 miles distant, is St. Via-

tor College, founded in 1868, with about 300 students, one of the most prominent Roman Catholic divinity schools in the West. Settled in 1853, Kankakee was incorporated in the following year. The government, as provided by the charter of 1892, revised in 1895, is vested in a mayor, chosen every two years, and a unicameral council, which elects boards of health and of local improvements and the customary administrative officials. Pop., 1900, 13,595; 1910, 13,986; 1914 (U. S. est.), 14,150.

KANNEGISSER, kân'ne-gē'sēr, KARL FRIEDRICH LUDWIG (1781-1861). A German author, translator, and critic. He was born at Wendemark, was educated at Halle, and taught from 1807 to 1843. He translated Beaumont and Fletcher (1808), the *Divina Commedia* (5th ed., 1873), Dante's lyrics (2d ed., 1842), and many others, ranging from Horace's Odes, Anacreon, and Sappho to Chaucer, Byron, and Scott, also the *Heland*. He wrote lyrics and dramas and was famed as an exegete of Goethe, a selection from whose lyrical verse he edited (1835) with valuable notes.

KANO, kân'no The name of a province and its capital in the Kingdom of Sokoto, now a part of the British Northern Nigeria in West Africa. The district lies between 11° N. and 13° N. and 8° E. and 10° E. In 1905 the District of Katagum was incorporated with the province. Area, about 31,000 square miles. It is rich in tropical fruits and is perhaps the most pleasing part of equatorial Africa. There are about 2,250,000 inhabitants—Fulans, Hausas, and slaves. Kano, the capital, lies 230 miles east-southeast of the city of Sokoto (Map: Africa, E 3). It is surrounded by walls 40 feet thick and contains the palace of the Emir. It is an important trading point, being visited by merchants from the northern countries of Africa and even from Arabia. Here is manufactured most of the leather marketed as morocco. A blue cotton material made by the natives is a prominent article of export. Sandals, shoes, weapons, grain, leather goods, indigo, cola nuts, saltpetre, ivory, and ostrich feathers are the staples of trade. Pop., about 100,000.

KANPUR. See CAWNPORE.

KANSA, kân'sâ See KAW.

KAN'SAS, kân'zas (from the Kansas Indians, called by themselves *Kanze*, a word said to refer to the wind; popularly known as the Sunflower State). One of the north central States of the United States. It lies exactly in the centre of the country, between long. 94° 37' and 102° W., its north and south boundaries are formed, respectively, by the fortieth and the thirty-seventh parallel. The State is bounded on the north by Nebraska, on the east by Missouri, on the south by Oklahoma, and on the west by Colorado. It has the form of a parallelogram with straight sides, except at the northeast corner, which is cut off by the Missouri River. Its dimensions are 408 miles from east to west and 208 miles from north to south; its area is 82,158 square miles, giving it the thirteenth rank in size among the States of the Union.

Topography. Kansas reflects two great regional influences. The first of these, and the greater, is that of the central prairies of the United States. The second is that of the frontal plain of the Rocky Mountains. Its surface rises gradually from an altitude of 750 feet in the extreme eastern part to about 4000 feet on the west boundary. The average altitude is about

KANSAS

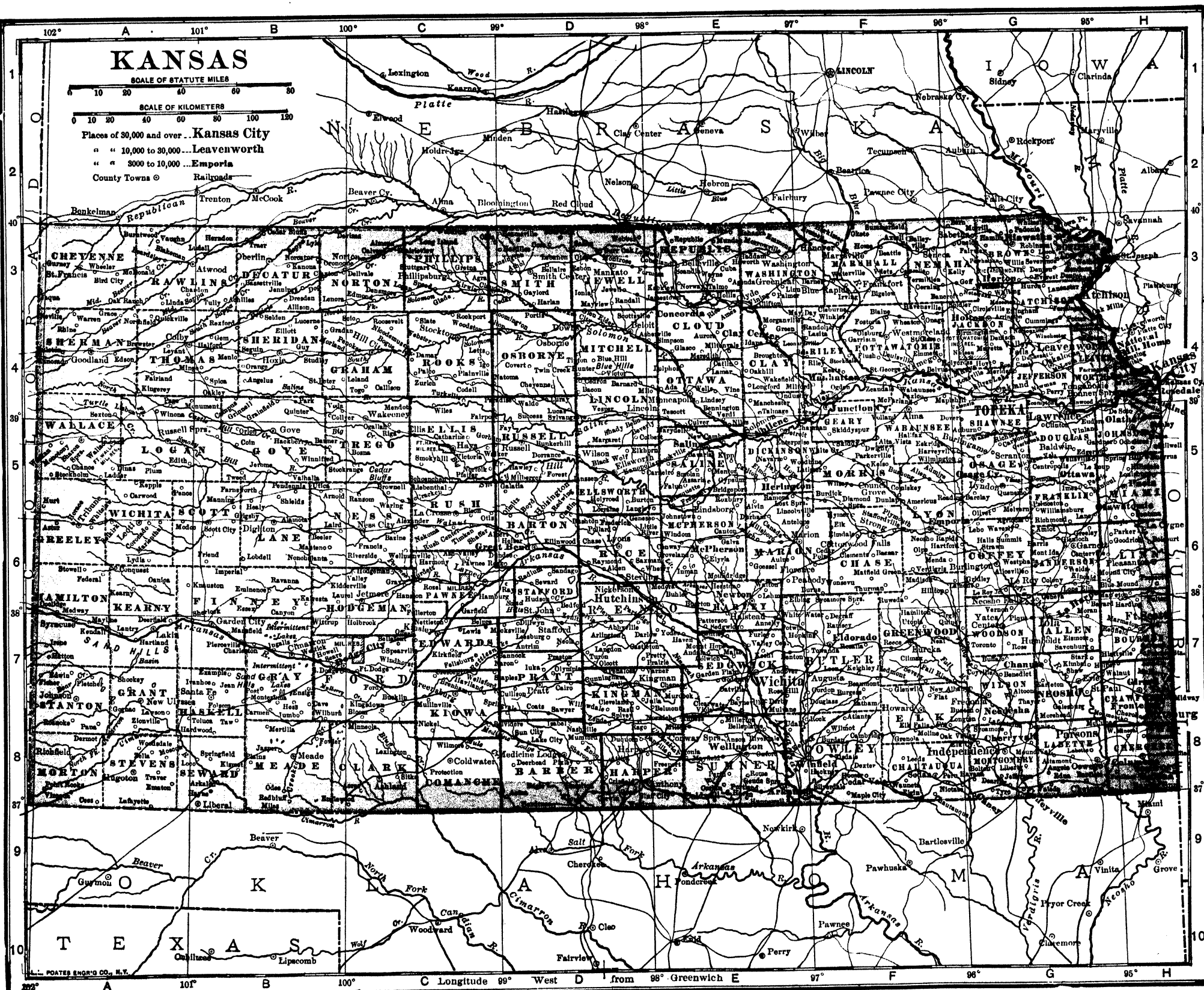


Places of 30,000 and over .. **Kansas City**

a " 10,000 to 30,000---Leavenworth

“ “ 8000 to 10,000 ...Emporia

County Towns © Railroads



region are wide belts of limestone of various shades somewhat loosely textured and easily wrought, while excellent sandstones are yielded by the Dakota group of the Cretaceous formation and by a large portion of the Tertiary series in the west.

Mining. The two principal mineral products of Kansas are fuels—coal and natural gas—these constituting nearly 45 per cent of the value of minerals produced. The coal-producing area is entirely in the eastern part, and the two leading counties in its production, Cherokee and Crawford, which have more than 90 per cent of the total, are in the extreme southeast. The production of coal in 1913 was 7,202,210 tons, valued at \$12,036,292. There was a small increase in production in 1914. In 1913 a total of 12,479 men were employed in the coal mines. The development of the natural-gas resources is largely part of the history of the decade 1900–10, for, although some gas was produced as early as 1886, it did not assume any importance until 1901, when the value amounted to about \$660,000. The production in 1913 was 22,884,547,000 cubic feet, valued at \$3,288,394, which was less than half of the value of the gas produced in 1909, the year of maximum production. Since 1909 the production of natural gas declined at approximately the same ratio it increased. The principal counties in the production of natural gas are Montgomery and Wilson. The oil fields of Kansas are a part of the Kansas-Oklahoma fields, which in turn form a part of the great mid-continent field. The production of petroleum has shown a marked falling off. The maximum was reached in 1904, and the production continued to be large in 1905–07. In 1904 it amounted to 4,250,779 barrels. In 1913 the production amounted to 3,375,000 barrels, valued at \$2,248,283, an increase of 49 per cent in quantity and 105 per cent in value over that of the preceding year. The production in 1914 showed a slight increase. Having been developed on the supposition of an abundant supply of gas, the decline of the production of the cement and zinc industries has somewhat followed that of the fuel. The year of maximum production of cement was 1910, when the output of Portland cement amounted to 5,655,808 barrels, valued at \$5,359,408. The production of Portland cement in 1913 amounted to 3,291,818 barrels, valued at \$3,286,861. A small amount of natural cement is also made. Clay products are of great importance, but these also declined in 1911–12 on account of the decreased production of gas. In 1913 the value of the clay products, exclusive of pottery, was \$1,919,910. The principal product from the clay-burning kilns is vitrified brick, in the production of which Kansas ranks fourth. The value of the recoverable metallic content of zinc ores in 1913 was \$1,129,856 and amounted to 10,088 tons. Other important mineral industries are salt mining and evaporating, stone quarrying, and the mining and calcining of gypsum. In the production of salt Kansas ranks fourth, and in zinc sixth. The less important mineral products are lead, lime, mineral waters, pumice, sand and gravel, sand-lime brick, sulphuric acid from zinc smelting, and zinc and lead pigments. The total value of mineral products in 1913 was \$27,312,563.

Agriculture. The principal soil is a brown silty loam, well adapted to the production of general farm crops. In the eastern half of

Kansas the rainfall is sufficient for the maturing of all crops, the normal annual precipitation ranging from 25 to 35 inches. In the western half the normal annual precipitation ranges from 15 to 25 inches and is sufficient to produce a good growth of grass on the ranges and to mature grain crops under intensive cultivation. Irrigation is practiced in the stream valleys of the western part, chiefly along the Arkansas River for 75 miles east from the Colorado line.

Of the land area, 82.9 per cent was in farms in 1909. Out of a total approximate land area in 1910 of 52,335,360 acres, the land in farms constituted 43,384,799 acres. The improved land in farms in 1910 was 29,904,067 acres, and the average number of acres per farm 244. The percentage of land in farms has risen from 34 in 1860 to 82.9 in 1910. The total value of farm property, including land, buildings, implements, and machinery, domestic animals, poultry, and bees, was \$2,039,389,910 in 1910.

In average size the Kansas farm increased from 171 acres in 1860 to 244 acres in 1910. A decrease occurred between 1860 and 1870, but since that time the increase has been continuous, averaging almost 2.5 acres per year. Of the total number of farms in 1910 (177,841), 112,443 were operated by owners and managers and 65,398 by tenants. In 1880, 163 per cent of the farms were operated by tenants. This proportion has shown continuous and rapid increase during the following decade, and in 1909 about 37 out of every 100 farms were thus operated. Of the 177,841 farm operators in 1910, 150,346 were native whites, and 25,804 were foreign-born whites. Germans were by far the most numerous of the foreign-born white farmers.

The following table shows the acreage, production, and value of the principal crops in 1914, as estimated by the United States Department of Agriculture:

CROP	Acreage	Prod bu.	Value
Corn	5,850,000	108,225,000	\$68,182,000
Oats	1,760,000	58,960,000	24,763,000
Wheat	8,660,000	177,200,000	168,340,000
Barley	240,000	5,880,000	2,764,000
Rye ..	50,000	1,000,000	800,000
Hay	1,650,000	*2,492,000	18,441,000
Potatoes	72,000	4,464,000	8,437,000

* Tons

Of the several hay and forage crops, wild, salt, or prairie grasses rank first in acreage, representing in this respect more than two-fifths of the total for all hay and forage crops. Alfalfa comes next, with about one-fourth of the total acreage of hay and forage.

Vegetables form an important agricultural industry. In 1909 the total acreage of potatoes and sweet potatoes was 132,665, and their value \$1,256,331. In 1914 potatoes and sweet potatoes and yams, the acreage of vegetables was 48,757 and their value \$2,964,000. The growing of sugar beets is conducted on a considerable scale. The acreage planted to this product in 1909 was 551, the product 50,736 tons, and the value \$256,262. Of sorghum cane there were grown 60,821 tons, from which 260,680 gallons of sirup, valued at \$112,374, were made. The orchard fruits grown in 1909 amounted to 1,447,849 bushels, valued at \$944,631. The most important

in quantity and value were apples; the production amounted to 1,356,438 bushels, valued at \$807,865. There were produced also in that year 6,317,684 pounds of grapes, valued at \$184,673. Of small fruits there were grown 5,477,274 quarts, valued at \$454,200. The most important of these in quantity and value were blackberries and dewberries, and, second, strawberries.

Live Stock and Dairy Products. Western Kansas is an important dairying and stock-raising region. The insufficient rainfall renders the cultivation of cereals uncertain, and the greater part of the area is divided into ranges for the growing of cattle. The great number of cattle used by the slaughtering plants in Kansas City creates an enormous demand, which stimulates to a large extent the cattle industry in the State. On Jan. 1, 1915, the number and value of live stock were estimated by the United States Department as follows: cattle, other than milch cows, 1,768,000, valued at \$75,140,000; milch cows, 726,000, valued at \$46,101,000; sheep, 316,000, valued at \$1,548,000; swine, 2,656,000, valued at \$26,826,000; horses, 1,132,000, valued at \$105,276,000; mules, 233,000, valued at \$23,766,000. The total number of fowls of all kinds in 1910 was 15,736,038, valued at \$7,377,469. The dairy cows on the farms on April 15, 1910, numbered 736,107. The milk produced in 1909 amounted to 172,742,767 gallons, from which butter amounted to 29,647,881 pounds and valued at \$1,140,000 was made. The total value of milk, cream, and butter fat sold and butter and cheese made in 1909 was \$13,091,739.

Manufactures. Kansas is essentially an agricultural State, and the manufacturing industries have been largely the outgrowth of its extensive agricultural resources, while in recent years they have been further stimulated by the development of rich zinc and coal mines and by the discovery of oil and gas. In 1909 the total value of manufactures was \$325,104,000. The growth has been rapid, owing chiefly to the growth of the meat packing and the products of flour mills and gristmills. Other manufacturing industries, however, show considerable growth. In 1909 Kansas ranked fourteenth, having advanced from thirty-first place in 1850. Only a small percentage of the total population is engaged in manufactures. In 1909 the value of products per capita was \$192. The accompanying table gives a comparative summary of manufactures in 1909, compared with 1904. Only those products valued at more than \$500,000 are included in this table.

The slaughtering and meat-packing industries include wholesale slaughtering and meat-packing establishments and those engaged in the manufacture of sausage, but not the numerous retail butcher shops, which slaughter a large number of animals. They include the manufacture of many by-products. In 1909 the State reported 12.1 per cent of the total value of slaughtering and meat-packing products of the United States and in this respect is surpassed only by Illinois. The importance of the industry is indicated by the fact that in 1909 it gave employment to 24 per cent of the average number of wage earners and reported products whose value represented 50.9 per cent of the total value of products of all the manufacturing industries.

The flour-mill and gristmill industry is second in importance. Kansas is one of the leading

wheat-growing States and ranks third in the value of flour-mill and gristmill products.

The industries connected with the smelting and refining of zinc since 1889 have been due largely to the discovery of gas and oil and also of coal in the same locality as the zinc ore. In 1889 there were only four establishments devoted to this industry, with products valued at \$964,000.

An industry deserving special mention is the manufacture of glass. The development of this is due directly to the discovery of large quantities of natural gas. Starting later than 1900, the industry had grown so that in 1909 the State ranked eighth in the value of its glass products. Kansas is one of the few States engaged in the production of salt and in 1909 ranked fourth in the value of this product. Nearly one-tenth of the value of the salt products of the United States in 1909 was produced in Kansas.

The total number of wage earners in 1909 was 44,215, 40,838 male and 3377 female. The wage earners under 16 years of age numbered 235, of whom 195 were males. For nearly half the wage earners in the State in 1909 the usual hours of labor were 60 a week.

The most important manufacturing cities are Kansas City, Wichita, Topeka, Leavenworth, Atchison, Pittsburg, Fort Scott, and Lawrence. Kansas City is the leading manufacturing city, with products valued at 50.5 per cent of the total in the State in 1909. Wichita ranks second and Topeka third.

Transportation. Kansas has admirable transportation facilities. The State is so situated geographically that it is traversed by several important railways which connect the industrial centres of the Mississippi valley with points in the West and Southwest. The Missouri River on the northeast boundary is the only navigable river. In former years the State suffered greatly from a lack of railway connection with the Gulf ports, but this has been remedied. The total mileage operated by railways in 1914 was 12,344. The longest mileage was that of the Atchison, Topeka, and Santa Fe, 3890. The Missouri Pacific Railway Company had 2868 miles of track; the Chicago, Rock Island, and Pacific, 1491; the St. Louis and San Francisco, 903, and the Missouri, Kansas, and Texas, 684. The Public Utilities Commission has general charge of railway rates. There were, in 1912, 21 companies operating electric railways, and there were 493 miles of single track of such railways.

Banking. The banking business was greatly affected from 1885 to 1891 by the wave of speculation which swept over the West. Among the chief assets of the State banks were heavy loans on overvalued real estate. These banks were unrestricted in their activity by any control. With the panic of 1893 there ensued a general foreclosure of mortgages, and dozens of banks suspended. The first comprehensive banking law was passed in 1891, when the office of bank commissioner was created. The present banking law was passed in 1897. It contains stringent provisions in regard to investments, overdrafts, liability of shareholders and directors, and cash reserve. These and other regulations have placed the State banks upon a solid foundation, and they share the confidence of the people equally with the national banks. Private banks cannot be established and only two are now in existence, and they conform to the State law. There is

COMPARATIVE SUMMARY FOR 1909 AND 1904

THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES

INDUSTRY	Cen- sus	Number of estab- lish- ments	PERSONS EN- GAGED IN INDUSTRY		Capital	Wages	Cost of mate- rials	Value of prod- ucts	Value added by manu- fac- ture
			Total	Wage earn- ers (aver- age num- ber)					
					Expressed in thousands				
All industries	1909 1904 1899	3,435 2,475 2,299	54,649 42,057 42,057	44,215 35,570 27,119	\$156,090 88,680 59,458	\$25,904 18,883 12,802	\$258,884 156,510 120,738	\$325,104 198,245 154,009	\$66,220 41,735 33,271
Artificial stone. .	1909 1904	207 23	584 87	307 40	413 63	162 18	297 25	688 56	391 31
Bread and other bakery products	1909 1904	435 268	1,488 974	900 626	1,306 752	483 304	1,989 1,005	3,433 1,862	1,444 857
Brick and tile	1909 1904	55 65	1,978 1,974	1,819 1,800	3,930 3,473	911 841	531 444	2,336 1,907	1,805 1,463
Butter, cheese, and condensed milk	1909 1904	60 90	568 604	348 414	1,776 1,993	211 188	4,951 3,256	6,071 3,946	1,120 690
Carriages and wagons and materials	1909 1904	46 38	322 279	246 214	439 324	134 105	245 117	530 321	285 204
Cars and general shop construction and repairs by steam-railroad com- panies.	1909 1904	23 23	8,319 6,449	7,686 6,196	9,607 3,042	5,173 3,930	5,219 7,241	11,193 11,521	5,974 4,280
Cement	1909 1904	12 4	2,365 776	2,143 714	16,387 3,616	1,359 402	1,556 419	4,682 1,475	3,126 1,056
Clothing, men's, including shirts	1909 1904	16 9	480 264	408 232	354 219	118 67	332 240	629 400	297 160
Cooperage and wooden goods, not elsewhere specified.	1909 1904	12 12	185 240	162 207	385 278	78 95	333 373	504 536	171 163
Copper, tin, and sheet-iron products	1909 1904	76 20	348 140	222 96	381 126	151 60	412 126	749 263	337 137
Flour-mill and gristmill products	1909 1904	501 354	3,778 2,713	2,360 1,831	22,741 13,817	1,448 1,024	60,439 36,895	68,476 42,034	8,037 5,139
Foundry and machine-shop products	1909 1904	137 90	2,605 1,820	2,110 1,567	6,791 2,866	1,343 920	3,034 1,614	5,919 3,489	2,885 1,875
Furniture and refrigerators	1909 1904	17 12	415 298	357 265	527 306	215 111	236 181	616 426	380 245
Glass	1909 1904	23 9	1,511 745	1,435 718	1,769 591	986 447	672 355	2,037 959	1,365 604
Ice, manufactured	1909 1904	86 44	789 337	593 237	4,209 1,373	380 145	342 141	1,460 585	1,118 444
Leather goods	1909 1904	74 24	493 301	339 235	1,105 628	204 124	821 393	1,387 729	566 336
Lumber and timber products	1909 1904	73 39	1,160 866	982 747	2,159 1,180	540 369	2,072 1,053	3,244 1,828	1,172 775
Marble and stone work	1909 1904	82 26	477 309	288 233	535 308	184 126	385 156	954 494	569 338
Paint and varnish	1909 1904	6 3	127 15	104 11	848 28	56 5	415 36	580 60	165 24
Patent medicines and compounds and druggists' preparations.	1909 1904	39 31	159 108	63 55	348 157	34 19	245 71	619 286	374 215
Printing and publishing	1909 1904	798 724	4,903 3,744	3,232 2,476	6,053 3,577	1,650 1,092	2,290 1,055	7,009 4,139	4,719 3,084
Salt.	1909 1904	10 10	505 566	451 526	2,544 1,636	188 230	519 534	1,106 1,123	587 589
Slaughtering and meat packing	1909 1904	35 22	12,265 10,394	10,591 9,392	37,869 25,332	5,862 4,836	147,646 85,146	165,361 96,376	17,715 11,230
Smelting and refining, zinc	1909 1904	12 13	1,968 2,648	1,821 2,507	9,057 10,903	1,136 1,570	8,877 8,449	10,857 10,999	1,980 2,550
Tobacco manufactures	1909 1904	141 172	601 823	415 594	383 512	180 238	282 341	682 910	420 569

a law guaranteeing bank deposits, the operation of which has been satisfactory. There were, in 1914, 212 national banks, with a capital of \$12,367,500 and individual deposits amounting to \$85,205,893. There were 945 State banks, with a capital of \$19,390,300 and deposits subject to check amounting to \$118,208,207. There were in the same year eight trust companies, with a capital of \$900,000. The incorporation of savings banks is authorized by the law, but practically none exist, as all commercial banks operate savings departments.

Government. The present constitution went into operation on Jan. 29, 1861. Amendments to the constitution may be proposed in either legislative House and must receive a two-thirds vote of all the members elected to each House. They must then be submitted to the electors of the State and be approved by a majority of the electors voting. When more than one amendment shall be submitted at the same time, they shall be so submitted as to enable the electors to vote on each amendment separately, and not more than three amendments shall be submitted at the same election. Two-thirds of the members elected to each branch of the Legislature concurring, propositions for calling a constitutional convention shall be submitted to the electors at large, and, if agreed to by a majority, the Legislature shall provide for the same at the next session.

Legislative.—The legislative power is vested in a House of Representatives and a Senate. The number of Representatives and Senators is regulated by law, but must never exceed 125 Representatives and 40 Senators. The House of Representatives consists of one member for each county in which at least 250 legal votes were cast at the next preceding general election. Sessions of the Legislature are held once in two years, beginning on the second Tuesday of January of each alternate year, with the session of 1877. Members of Representatives are elected for two years and members of the Senate for four years.

Executive.—The executive department consists of a Governor, Lieutenant Governor, Secretary of State, Auditor, Treasurer, Attorney-General, and Superintendent of Public Instruction, who hold office for two years. The supreme executive power of the State is vested in the Governor. The Lieutenant Governor is President of the Senate.

Judiciary.—The judicial power of the State is vested in a supreme court, district courts, probate courts, justices of the peace, and such other courts inferior to the supreme court as may be provided by law. The supreme court consists of seven justices, who are chosen by the electors at large for terms of six years, and who are privileged to sit in two divisions. Three justices constitute a quorum in each division, and the concurrence of three are necessary for a decision. The justice who is senior in a continuous term of service is chief justice. The State is divided into five judicial districts, in each of which there is elected a district judge. He holds office for four years. There is in each county a probate court, the judge of which holds office for two years. Two justices of the peace are elected in each township with a term of office of two years.

Suffrage and Elections.—A constitutional amendment adopted Nov. 5, 1912, provided that "the rights of citizens of the State of Kansas to vote and hold office shall not be abridged on

account of sex." Every person over 21 years of age who is a citizen of the United States or of foreign birth who has declared intention of becoming a citizen conformably to the laws of the United States, is a qualified voter if a resident in the State six months, and in the township or ward 30 days next preceding the election. A primary law passed in 1908 provided for the nomination of United States Senators and for candidates to elective offices, either by a primary or by independent nominations as provided by existing statutes. This law also made provision for the date on which primaries shall be held, these varying with the cities of the different classes and the various forms of government. Elections for State officers are held on even-numbered years and for municipal officers on odd years. A separate official primary ticket for each political party is printed and provided for use at each voting precinct. The person receiving the greatest number of votes at a primary is a candidate of that party, for any office other than that of United States Senator, at the next ensuing election. The candidates for United States Senator receiving the highest number of votes in the greatest number of representative and senatorial districts of the State are declared by the State Board of Canvassers the nominees of their respective political parties for that office. The act designates the composition of the party council, the day of its meetings, and its duties.

Local and Municipal Government.—Cities are divided into three classes according to population, viz., first class, over 15,000; second class, under 15,000 and over 2000; third class, not exceeding 2000. By law the larger cities having the commission form of government have five commissioners and the smaller only three. Each commissioner is under bond to protect the city from financial loss through incompetence, neglect, or dishonesty. The commission-governed cities have in most cases the usual features of initiative, referendum, and recall. Cities have the power to vote for a commission form of government, and, at the end of 1914, 40 cities in the State had so voted. The largest of these were Coffeyville, Fort Scott, Hutchinson, Independence, Kansas City, Lawrence, Leavenworth, Parsons, Pittsburg, Topeka, and Wichita (qq.v.).

Miscellaneous, Constitutional, and Statutory Provisions.—Corporations can only be created under general laws, but all such laws may be appealed or amended. Contributions to political campaigns by corporations are prohibited, and newspapers are prohibited from printing campaign literature unless over the signature of at least two officers of the corporation or committee. A child-labor law limits the number of hours of employment for children under 14 years of age, and the hours of work for persons under 16 years of age. The sale of cigarettes and the use of tobacco by minors in any form are prohibited. In 1911 the Legislature passed a workmen's compensation act and an employers' liability act applicable to railroad corporations. Desertion by a husband or parent is punishable by a maximum penalty of two years of hard labor in a reformatory or penitentiary. A law passed in 1909 modified the prohibition amendment to the constitution of 1880 by prohibiting the sale of intoxicating liquors for any use whatever except sacramental purposes. The same Legislature enacted a law against white-slave traffic.

Finance. A large public debt was created between 1861 and 1871, owing chiefly to the extraordinary war expenses and also to the difficulty of collecting taxes. This debt in 1865 amounted to \$517,000 and in 1870 to \$1,403,000. In the latter year a movement began for the reduction of expenditures and the increase of taxation, and from that date the financial condition of the State was improved. Beginning in 1880, the State adopted the policy of purchasing its bonds for the various permanent funds so as to reduce its net indebtedness. The State's steady increase of population, with the decline in the amount of the debt less sinking-fund assets, has reduced the debt per capita very materially. In 1880 the total debt of the State was \$1,182,000, and in 1912 it amounted to only \$370,000. The receipts from all sources for the fiscal year ending June 30, 1913, amounted to \$8,471,318, and the disbursements to \$8,025,250. At the close of the fiscal year ending June 30, 1913, there was in the treasury a balance of \$1,735,276. The receipts include the direct State tax, receipts on account of payment of bonds and interest due the several State school funds, fees of State offices, insurance-fund receipts, fees of all State charitable and educational institutions, United States aid to the State agricultural college, and miscellaneous fees.

Militia. The organized militia of the State includes the first brigade of infantry, comprising first and second infantry, first provisional company of infantry and second provisional company of infantry, a battery of field artillery, a company of signal troops, and a detachment of sanitary troops. There were, in 1913, 1694 enlisted men and 130 officers enrolled in the militia. Males of militia age, from 18 to 44 years, in 1910, numbered 370,227.

Population. The population by decades from 1860 has been as follows: 1860, 107,206; 1870, 364,399; 1880, 996,096; 1890, 1,428,108; 1900, 1,470,495; 1910, 1,690,949. The estimated population on July 1, 1914, was 1,784,897. In 1890 the State ranked tenth in population, but in 1910 had dropped to twenty-second. The population per square mile in 1910 was 20.7. By far the greater proportion of the population consists of native-white persons (1,270,057 in 1910). The native whites of foreign or mixed parentage numbered 292,105, and the foreign-born whites 135,190. The largest number of foreign-born whites were natives of Germany, 34,506. From Russia came 15,311, from Sweden 13,309, from Austria 12,094, and from England 11,256. Those living in towns of 2500 or more numbered 493,790 in 1910. The rural population in 1910 numbered 1,197,159. The population was in 1910 divided by sex into 885,912 males and 805,037 females. The males of voting age numbered 508,529. The smallness of the increase in the population in each decade from 1890 is due largely to the emigration of settlers to what was at that time the adjoining territory of Oklahoma and to Indian Territory. There was a large improvement from 1880 to 1890 as a result of the "boom" which occurred in the entire trans-Missouri region in the latter part of the decade. As Kansas is centrally situated and one of the last of the Mississippi valley States to be settled, the population is more representative of every part of the country than that of most of the other Western States. This condition was especially accentuated in the early period of settlement due to the slavery

struggle—both the North and the South having attempted to secure control of the field. (See *History*.) Owing to the dryness of its soil and climate, the western third of the State is very sparsely inhabited. There are no large centres of population, and the percentage of urban population as noted above is consequently small. Kansas City and Wichita are the only places which in 1910 had a population of 50,000 or over. The population of Kansas City in 1910 was 82,331 and of Wichita 52,450. Topeka, the capital, had a population of 43,684. The other larger cities and 1910 populations are Leavenworth, 19,363; Atchison, 16,429; Hutchinson, 16,364; Pittsburg, 14,755; Coffeyville, 12,687; Parsons, 12,463; Lawrence, 12,374; Independence, 10,480; Fort Scott, 10,463.

Education. The State from its earliest settlement has been one of the most progressive in its educational policy. Although there is a great preponderance of rural population and a consequently serious problem to meet, the percentage of illiteracy is small. In 1910, of a total population 10 years or over of 1,322,562, 2.2 per cent were illiterate. Only four other States—Iowa, Nebraska, Oregon, and Washington—had in 1910 a lower percentage of illiteracy. Among native-born whites the illiterates in 1910 numbered only 0.8 per cent of a total population of 10 years or over. Among foreign-born whites the percentage was 10.5 per cent, and among negroes it was 12 per cent (in 1900, 22.3 per cent).

According to the thirteenth census the school population in 1910 (ages 6 to 20) was 515,156. Of these an average of 363,695 attended schools. Out of the school population, 388,371 were native-born whites, 99,790 of foreign or mixed parentage, 10,321 foreign-born whites, and 10,047 negroes. According to the report of the State Superintendent of Public Instruction the total school population in 1912 was 510,273. The total enrollment in that year was 395,064, and the average daily attendance 298,128. The number of male teachers employed in 1912 was 2639; female teachers numbered 11,464. The average monthly salaries of teachers in rural schools was \$52.11 and in graded schools \$67.25. The average length of the school term was 31 weeks. The total expenditure for school purposes in 1912 was \$11,158,255.

The progress and development of high schools have been remarkable. From 1907 to 1912 the number of high schools increased 100 per cent, the enrollment increased 100 per cent, and the teaching force increased 120 per cent. The courses in these high schools have been broadened and liberalized with a view to conserving the interests of that great majority of pupils whose formal training ends with the high school. There were, in 1912, 189 high schools maintaining normal training courses and 96 high schools offering courses in agriculture and domestic science. In addition to this, many schools offer commercial courses. The establishment of township high schools has been undertaken. The courses in these schools have in view rural conditions and rural needs. In recent years there has been a decided awakening among the people of the State as to the needs of the rural school. The Legislature of 1911 passed several important measures looking to the improvement of these schools. In 1911, 124 new rural school buildings were erected, and, in 1912, 142. In 1913 there were 83 consolidated schools, representing 200

original districts of the ordinary type, and in 52 of these schools work of high-school grade was conducted.

There are State normal schools at Emporia, Hays, and Pittsburg. The latter is a manual-training normal school. Other State institutions include the University of Kansas at Lawrence, the Kansas State Agricultural College at Manhattan, School for the Blind at Kansas City, School for the Deaf at Olathe. These institutions are under the control of a State board of administration created by the Legislature of 1913. The private institutions for higher education include Baker University at Baldwin, Bethany College at Lindsborg, Campbell College at Holton, the College of Emporia at Emporia, Cooper College at Stirling, Fairmount College at Wichita, Friends University at Wichita, Highland College at Highland, Kansas Wesleyan University at Salina, McPherson College at McPherson, Midland College at Atchison, Ottawa University at Ottawa, Southwestern College at Winfield, Washburn College at Topeka, and Western University at Quindaro.

Charities and Corrections. Charitable institutions are under the supervision of a State board of control, and the penal institutions are controlled and supervised by a State board of corrections. They include the Topeka State Hospital, the Osawatimie State Hospital, the Larned State Hospital, the State Hospital for Epileptics at Parsons, the State Tuberculosis Hospital at Norton, the State Home for Feeble-Minded at Winfield, and the State Orphans' Home at Atchison. The penal institutions include the State Penitentiary at Lansing, the Industrial Reformatory for Young Men at Hutchinson, the Boys' Industrial School at Topeka, and the Girls' Industrial School at Beloit. There are two patriotic institutions, the State Soldiers' Home at Fort Dodge and the Mother Bickerdyke Home Annex at Ellsworth. There are also a large number of private institutions engaged wholly or partly in charitable work, receiving aid by appropriation. These institutions are all under the supervision of a State board of control. In 1911 a board of penal institutions replaced the directors of the penitentiary and managers of the Kansas industrial reformatory. Convicts of the State are employed in building public roads, and it is unlawful for convicts to work for private citizens.

Religion. The Methodists are the largest religious body in the State, having more than twice the membership of any other Protestant denomination. Among the large number of other sects represented, the most important are the Roman Catholics, Baptists, Presbyterians, Disciples of Christ, Lutherans, Congregationalists, and Friends.

History. Among the Indian tribes who lived within the present boundaries of Kansas were the Shawnees, the Osages, the Omahas, and, of later arrivals, the Kickapoos and the Illinois. In 1541 a small force of Spaniards and Indians under Coronado traversed the region from southwest to northeast, but no results followed this expedition. The country remained unexplored till 1719, when it was visited by Frenchmen from Louisiana. In 1803 the greater portion of what is now Kansas passed into the possession of the United States as a part of the Louisiana Purchase; the southwestern section of the State was ceded by Texas to the Federal government in 1850. The region was explored by Lewis and

Clark in 1804, Lieutenant Pike in 1806-07, and Lieutenant Long in 1819. Fort Leavenworth was erected in 1827, and four years later the Baptists founded a mission to the Shawnees near the Missouri River. Emigrant trains on the way to California crossed the region as early as 1844; and the army of General Kearney, intended for the invasion of Mexico, set out from Fort Leavenworth in 1846. In 1854 the population was estimated at 700. The region formed a part of the Territory of Missouri till 1821, remaining unorganized from that year till 1854. When it was proposed to organize the Territories of Kansas and Nebraska (see KANSAS-NEBRASKA BILL), the supporters of slavery incorporated in the act of organization a declaration repealing the Missouri Compromise of 1820, and leaving the question of slavery to be decided by the inhabitants of the Territory in framing their constitution. The Act, passed in May, 1854, thus removed the barrier to the extension of slavery which had been created by Congress 34 years previously, and to the maintenance of which during all that period both the Northern and Southern portions of the Union had held themselves to be "forever" bound. The plea by which it was sought to justify this act was that the Compromise of 1850, which had been adopted by Congress as a final settlement of all the differences respecting slavery which then existed, operated as a virtual repeal of the Missouri restriction.

Before the bill had passed through Congress, immigrants from Missouri and Arkansas and from the Northern States entered Kansas, and the struggle for its possession began. On June 10 a proslavery meeting declared slavery existent in the Territory. In September immigrants from Missouri and Arkansas founded Leavenworth and Atchison, while colonists from New England sent out by the Massachusetts Emigrant Aid Society settled before the end of that year at Lawrence, Topeka, Osawatimie, and other towns. On October 7 A. H. Reeder, appointed Federal Governor of the Territory, arrived in Kansas. In the same month a force of Missourians made an unsuccessful attempt to drive the antislavery men from Lawrence. On Nov. 29, 1854, at an election held for the choice of a Territorial delegate to Congress, armed bodies of men from Missouri took possession of the polls and cast 1700 votes out of a total of 2843. On March 30, 1855, an attempt was made to elect a Territorial Legislature, and again the Missourians appeared in large numbers and elected proslavery delegates from every district. The number of proslavery votes was 5427 out of a total of 6218, though it was well known that the number of legal voters in the Territory was less than 3000. Governor Reeder set aside the returns from six of the districts and ordered new elections, which resulted in the choice of Free State delegates. The first Territorial Legislature assembled at Pawnee, July 2, 1855. The Proslavery party had a majority in this body and expelled the members who had been chosen at the second election ordered by the Governor. The statutes of Missouri were adopted in the main. Acts were passed making it a capital offense to assist slaves, in escaping either to or from the Territory, and felony to circulate antislavery publications or to deny the right to hold slaves, also requiring all voters to swear to support the Fugitive Slave Law. In July Governor Reeder broke off all relations

with the Legislature and became an active partisan of the Free State party. He was succeeded, on July 31, by Wilson Shannon, who in turn gave way to John W. Geary in September, 1856. The Free State men, meanwhile, refused to acknowledge the legality of the Territorial government, and initiated a movement for establishing a State government without an enabling act on the part of Congress. A convention of Free State men met at Topeka, Oct. 23, 1855, and adopted a State constitution prohibiting slavery after July 4, 1857, but excluding negroes from the State. An election was held December 15, and the constitution was accepted. The Proslavery party, however, abstained from participation. An election for State officers and a Legislature under this constitution was held Jan. 15, 1856, and Charles Robinson was chosen Governor. It was the object of the Free State party to avoid armed hostilities with the proslavery government of the Territory, so as not to come into conflict with the United States authorities. The attempt, however, of the Territorial sheriff to seize a prisoner at Lawrence resulted in his being shot. The leaders of the Free State men were thereupon indicted for treason and imprisoned, and on May 21 a mob of proslavery men sacked the town of Lawrence. The massacre of five men on Pottawatomie Creek by John Brown and his sons, on May 23, 1856, marked the beginning of civil war, which continued through the month of June till the United States troops suppressed the combatants. On July 4, 1856, the Free State Legislature met at Topeka, but was dispersed by the Federal forces. A second attempt on the part of the Legislature to convene at Topeka, Jan. 6, 1857, led to the arrest of its members. Gov. Robert J. Walker, who had replaced Governor Geary in March, 1857, succeeded in making terms with the Free State men, who abandoned the Topeka constitution and agreed to take part in the election for a Territorial Legislature in October, 1857. The Free State party triumphed at the polls; but the Proslavery party had in the meanwhile summoned a convention which, on Nov. 7, 1857, adopted the Lecompton Constitution (q.v.), guaranteeing the possession of all slave property already in Kansas, and submitted to the electors (December 21) that clause only which legalized slavery for all time. The provision was accepted by the Proslavery party, the Free State men declining to vote, but when the Lecompton Constitution as a whole was submitted to the people, Jan. 4, 1858, it was decisively rejected and defeated indirectly, for the second time, on August 2, at an election ordered by Congress on the so-called English Bill, a compromise measure. Immigration from the North in the meanwhile had made the Free State men overwhelmingly preponderant. In the same election in which the Lecompton Constitution was rejected for the first time, they succeeded in capturing the Territorial government. On July 5, 1859, a constitutional convention met at Wyandotte and adopted a constitution prohibiting slavery (July 27). This was ratified October 4 by a vote of 10,421 to 5530. On November 8 delegates to Congress and members of the Territorial Legislature were chosen, and on Jan. 29, 1861, Kansas was admitted into the Union.

In the Civil War Kansas sent into the field a larger number of soldiers, in proportion to its population, than any other State. The eastern part of the State lay exposed to the incursions

of Confederates from Missouri. On Aug. 21, 1863, Quantrell's guerrillas raided the town of Lawrence and killed a large number of the inhabitants. The cessation of war was followed immediately by a great influx of immigrants. Railway development began in 1868, and by 1872 there were more than 2000 miles of railway track in operation. Between 1878 and 1880, widespread excitement and dissatisfaction among the negroes of the South led to the migration of 40,000 of their number to Kansas. Prohibition became an important question in politics after 1880; the movement encountered great opposition in the . . . but by 1890 the principle was well established in the State, though in the large cities the antiliqor laws were not zealously enforced. The influence of the Farmers' Alliance (q.v.) after 1888 brought the State into conflict with the railway companies and led to the passing of antitrust laws in 1889 and 1897.

In politics Kansas has belonged for the most part to the Republicans, who failed to carry the State in only three elections from the Civil War to 1906. In 1882 the Democrats won on an anti-prohibition platform, and in 1892 and 1896 the People's party and Democrats, in fusion, elected their ticket. In the winter of 1893 the Republicans and the Populists each proceeded to organize an independent Legislature. The dispute was terminated by the intervention of the militia and the courts. The struggle of independent producers and the oil trust for the possession of the Kansas oil field led, in 1904-05, to a congressional investigation of the prevailing commercial conditions. At the same time the State Legislature declared the Standard pipe lines common carriers, fixed maximum railway charges for transporting oil, and voted to establish a State oil refinery, which was later declared unconstitutional.

Politics found in Kansas prolific soil, and the growth of this party was facilitated by the passage of the new primary law which went into effect in 1908. In the primaries of that year W. R. Stubbs and Joseph L. Bristow, Insurgent Republican candidates for the nomination to the offices of Governor and United States Senator respectively, were successful. In the election on Nov. 3, 1908, Stubbs received 197,298 votes; Bryan, 161,086; Debs, Socialist, 12,420. Mr. Stubbs was elected Governor by a plurality of nearly 35,000. A Republican Legislature was chosen which elected Mr. Bristow to the United States Senate. The Insurgents continued to gain in strength, and in the primaries of 1910 Governor Stubbs was renominated, and the results in other offices showed almost universal success for this faction. They were equally successful in the election following, and Governor Stubbs was reelected by a majority of 16,000 votes. The election for municipal offices held in 1911 was noteworthy on account of the large number of Socialists chosen. They elected the mayor in Girard and a number of officers in Fort Scott. In this year two Democrats were chosen to succeed Republican Representatives who had died. At the election on Nov. 5, 1912, the Democrats carried the State for President. The vote was as follows: Wilson, 143,663; Roosevelt, 120,210; Taft, 74,845; Debs, 26,779. For Governor, Hodges, Democrat, received 167,540; Capper, Republican, 167,511; and the Socialist candidate, 24,804. The Legislature was returned Democratic. The gubernatorial contest was the

closest in the record of the State, an official count being necessary before determination could be reached. Judge William H. Thompson, Democrat, was chosen United States Senator by the new Legislature. In 1914 the Republicans regained a large part of their strength. In the November election Arthur Capper, Republican, defeated Governor Hodges, while the Progressive vote fell off nearly 40,000. Charles Curtis, who had defeated Senator Bristow for the Republican nomination for the Senate, was elected for the term beginning March 4, 1915. This was the first election of the State in which women participated. The following is a list of the Governors and the parties to which they belonged

TERRITORIAL

Andrew H. Reeder	1854-55
Wilson Shannon	1855-56
John W. Geary	1856-57
Robert J. Walker	1857-58
James W. Denver	1858
Samuel Medary	1858-60
Frederick P. Stanton	1860-61

STATE

Charles Robinson	Republican	1861-63
Thomas Carney	"	1863-65
Samuel J. Crawford	"	1865-69
James M. Harvey	"	1869-73
Thomas A. Osborn	"	1873-77
George T. Anthony	"	1877-79
John P. St. John	"	1879-83
George W. Glick	Democrat	1883-85
John A. Martin	Republican	1885-89
Lyman U. Humphrey	"	1889-93
Lorenzo D. Lewelling	Populist-Democrat	1893-95
Edmund N. Morrill	Republican	1895-97
John W. Leedy	Populist-Democrat	1897-99
William E. Stanley	Republican	1899-1903
W. J. Bailey	"	1903-05
Edward W. Hoeh	"	1905-09
Walter R. Stubbs	"	1909-13
George H. Hodges	Democrat	1913-15
Arthur Capper	Republican	1915-

Bibliography. Hutchinson, *Resources and Development of Kansas* (Topeka, 1871); Kansas Board of Agriculture, *Kansas A Brief Account of its Geographical Position, Dimensions, Topography* (ib., 1885); Hodder, *The Government of the People of the State of Kansas* (Philadelphia, 1895); Haworth, *Annual Bulletin on the Mineral Resources of Kansas* (Lawrence, 1897-1900); Goss, *History of the Birds of Kansas* (Topeka, 1891); Robinson, *Kansas Its Interior and Exterior Life* (10th ed., Lawrence, Kans., 1899). In addition to the general works dealing with the history of the slavery question from 1850 to 1860, consult. Hale, *Kansas and Nebraska* (Boston, 1854); Brewerton, *The War in Kansas* (New York, 1856); Gibson, *Geary and Kansas* (Philadelphia, 1857); Robinson, *Kansas* (Boston, 1857); Holloway, *History of Kansas* (Lafayette, Ind., 1868); Wilder, *Annals of Kansas* (Topeka, 1875); Tuttle, *A Centennial History of the State of Kansas* (Madison, Wis., 1876); Andreas, *History of Kansas* (Chicago, 1883); Thayer, *A History of the Kansas Crusade* (New York, 1889); Kansas Historical Society, *Transactions* (Topeka, 1890 et seq.); Robinson, *The Kansas Conflict* (New York, 1892); Fung, *The Struggle for Freedom in Kansas* (ib., 1894); *Kansas: A Cyclopaedia of State History* (Chicago, 1911); C. R. Green, *Early Days in Kansas* (Topeka, 1912); R. G. Taylor, *Syllabus of Kansas History* (Manhattan, 1913); M. E. Dobbs, *Kansas Voters' Manual* (Wichita, 1913); also reports of Kansas State Historical Society, State Board of Education, and other State departments.

KANSAS, UNIVERSITY OF. A State institution for higher education at Lawrence, Kans., founded in 1866. The student body of the university has increased greatly in recent years. In 1895 it had about 630 students. This number had increased in 1914 to over 2400. It is the only institution in Kansas which concerns itself with practically nothing less than higher education of the college or university type. The university was organized in 1864 and opened in 1866. It has departments of engineering, music, law, pharmacy, and a preparatory department. There is also a school of medicine. The university is supported entirely by the State. Since 1913 the university has done a large amount of public-service work for the State. It gives the time of one full professor to the Public Utilities Commission; the time of one man to the State Board of Health, in connection with water supply and sewage disposal; the time of one full professor to the development of State fish hatcheries, to the State Board of Health the time of three men in drug laboratories, two in the food laboratories, two men in the water-analysis laboratory, and the greater part of the time of one man to pathological work for the State. The university and the high schools of the State form practically one system. The faculty numbers about 200. It has an endowment of about \$150,000 and an annual appropriation of about \$500,000. The library contains about 85,000 volumes. The president in 1914 was Frank Strong, LL.D.

KANSAS CITY. The largest city in Kansas and the county seat of Wyandotte County, situated on both sides of the Kansas River, at its confluence with the Missouri, opposite and adjoining Kansas City, Mo. (Map Kansas, H 4). It is on the Chicago Great Western, the Missouri Pacific, and the Union Pacific railroads, and on two interurban electric lines which furnish freight and passenger service for a large traffic. The city covers an area of 17 square miles and is built on bluffs, plateaus, and river bottoms. It is noted for its large stockyards, slaughterhouses, and . . . plant and, with the exception of . . . most important live-stock market in the United States. It has also important grain and flour interests, the railroad and mill elevators on the Kansas side having a grain capacity of 8,965,000 bushels, and there are railroad-car and machine shops and extensive manufactories of soap, flour, barrels, boxes, structural steel, railroad iron, car wheels, scales, foundry products, etc. The manufacturing interests represent a production valued at \$175,000,000 annually, with a capital investment of \$45,000,000, and give employment to some 15,000 persons.

The Kansas River, from the bed of which an enormous amount of high-grade building sand is produced, is spanned here by 14 railroad, vehicle, and street-car bridges. There are 20 parks and playgrounds, comprising an area of 250 acres. Of these, City Park is a remarkably beautiful natural park of 100 acres. In the business district, adjoining the well-known Wyandotte Indian Cemetery, is Huron Park, in the centre of which is situated the Carnegie library. Thirty miles of boulevards have been planned. More than one-third of these were developed in 1914, and provisions made to carry on the work under a definite annual expenditure. Kansas City is the seat of the Kansas City University (Methodist Episcopal), opened

in 1896, Western University (colored), and the State Institution for the Blind. There are two large hospitals and other smaller ones, three fine high schools, and more than 40 grade and parochial schools. The city's income in 1913 was \$3,430,000, while its payments amounted to \$3,258,000, the chief items of expense being: education, \$394,000; police department, \$82,000; fire department, \$130,000; and water-supply system, \$74,000. The city owns the water works, which represent an investment of \$2,000,000, and the electric-light plant. The municipality adopted the commission form of government in 1909. Kansas City was chartered in 1886, when the former municipalities of Armourdale, Kansas City, Wyandotte, and Armstrong were consolidated under the present name. The oldest of these cities was Wyandotte, settled by the Wyandotte Indians in 1843. White settlers came soon after, and in 1858 it received a town charter. The following year it was incorporated as a city. The place was the scene of considerable agitation during the Kansas-Nebraska trouble, the convention which drew up the Kansas constitution having met here in July, 1859. Pop., 1890, 38,316; 1900, 51,418; 1910, 82,331, including 10,344 persons of foreign birth and 9286 negroes; 1914 (U. S. est.), 94,271.

KANSAS CITY. An important railroad centre in Jackson Co., Mo., at the junction of the Missouri and Kansas rivers, on the Missouri-Kansas boundary line, 235 miles direct and 280 miles by rail west by north of St. Louis, on the Chicago and Alton, Atchison, Topeka, and Santa Fe, Burlington Route, Chicago Great Western, Chicago, Rock Island, and Pacific, Chicago, Milwaukee, and St. Paul, Kansas City Southern, Missouri, Kansas, and Texas, Missouri Pacific, Union Pacific, St. Louis and San Francisco, and Wabash railroads (Map Missouri, B 2). Within the city these roads form the Kansas City Terminal Railway Company, which operates a Belt Line some 30 miles in length and which furnishes intercommunication among them. The company is just completing a comprehensive system of freight and . . .

. . . minals which will cost upward of \$10,000,000. A part of the plan includes the new Union Station, to be used in common by all of the roads and which will cost \$6,500,000. This is one of the largest union stations in America. Two other roads—the Kansas City, Mexico, and Orient and the Missouri, Oklahoma, and Gulf—are built to within a short distance of, and are planned to enter, the city. To facilitate railroad transit three great bridges have been constructed across the Missouri River, and another one has been authorized (1914) by Congress. Railroad facilities are supplemented by transportation on the Missouri River from Kansas City to St. Louis by the Kansas City-Missouri River Navigation Company. This company is owned by the citizens at large, its cash capital of \$1,200,000 having been raised by popular subscription. It operates a regular service of steamers and steel nonsinkable fire-proof barges and provides water transportation to the sea via the Missouri and Mississippi rivers to New Orleans. The street-railway system consists of 281 miles of tracks, and universal transfers are given. Kansas City is rapidly growing as an interurban railway centre, there being 8 lines in operation, with 180 miles of tracks, and numerous lines proposed.

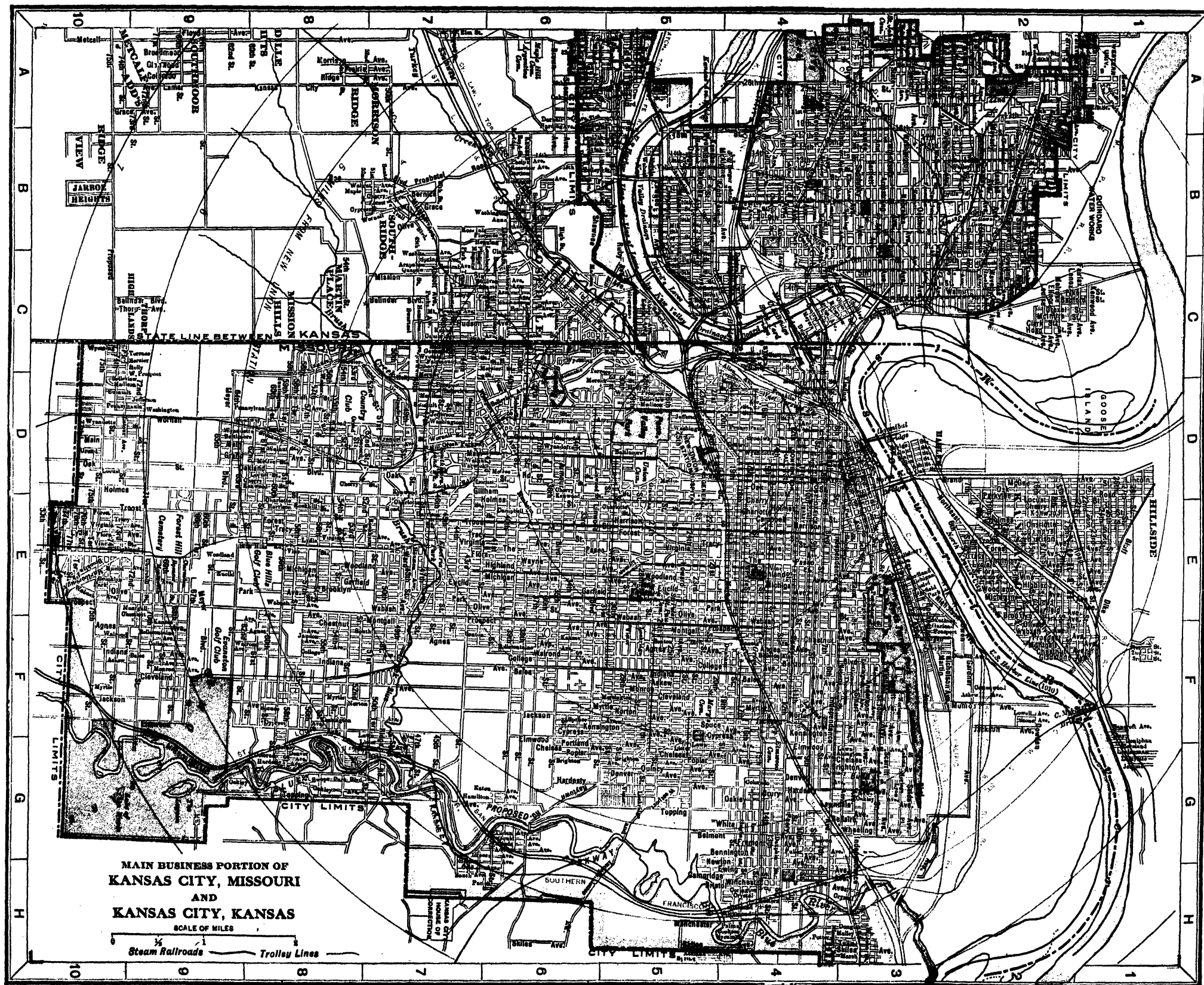
Kansas City is picturesquely situated on

three elevations. The manufacturing and wholesale districts are, in the main, on the first and are separated from the central business or retail district, which is on the next elevation, by high bluffs, the two elevations being connected by tunnels and ornamental viaducts. The residential sections are on the third and highest elevation. The bluffs admit of splendid landscape treatment and are mostly a part of the park and boulevard system, the famous Cliff Drives running along them. Out of the total street mileage (600) there are 400 miles of paved streets, the paving being largely of asphalt, brick, and macadam. Among the notable public structures are the Union Station, United States Custom House, City Hall, Court House, Board of Trade Building, Live Stock Exchange (which is the largest building devoted exclusively to live-stock offices in the world), Y. M. C. A., General Hospital, and high schools (of which latter there are six). There is also a United States Weather Bureau Station.

A comprehensive system of public schools is supplemented by institutions for special training in medicine, nursing, osteopathy, law, engineering, dentistry, music, business, dressmaking, and industrial sciences. There are a number of parochial schools and academies of high standing and numerous private and preparatory schools. The University of Missouri, the University of Kansas, William Jewell College, Park College, and Baker University are within a few hours' ride. The Board of Public Welfare operates a municipal farm, where men who are petty offenders work out their fines in the open air and where farming, truck gardening, quarrying, and building construction are taught. The board also operates a woman's reformatory and welfare loan agency, maintains a housing commission and a free legal-aid bureau, and has general oversight of charities and corrections and public dance halls. The Juvenile Court (a division of the Circuit Court) maintains a boys' hotel, a girls' industrial home, and a farm for boys (all of these for neglected or abandoned children) and administers a widows' pension fund provided by the county. The Jewish Educational Institute, the Helping Hand Institute, and the Institutional Church are effective aids in social welfare work. Kansas City's park and boulevard system is extensive. Fifty miles of parked boulevards connect 2600 acres of public parks within the city limits, the largest of which is Swope Park, containing 1331 acres. There are a number of public amusement parks.

In Kansas City is located the Federal Reserve Bank of District No. 10, which includes the States of Kansas, Nebraska, Wyoming, Colorado, one-half of New Mexico, one-half of Oklahoma, and one-fourth of Missouri. Bank clearings for 1914 were \$3,015,810,567, an increase of 174 per cent in 10 years. In monthly clearings it has ranked, during recent years, between fifth and sixth in the cities of the United States.

As a distributing point for a vast agricultural region to the west and south, Kansas City controls large wholesale interests, its jobbing trade being very extensive. In grain, live stock, and meat packing Kansas City, Mo., and its sister city Kansas City, Kans., are closely allied, the two cities forming practically one industrial and commercial community with the same street-car system, the same telephone service, and the same freight and passenger terminal. Kansas



City is the largest winter-wheat market in the world and the second market (primary) in receipts of general grain in the United States. It has elevator capacity for over 18,000,000 bushels of grain. It is the largest market and distributing point for hay in the world. Flour milling is extensive, the output for 1914 being 2,178,800 barrels. The total value of live stock marketed in 1914 was \$208,000,000, and the sale of products from packing houses in 1914 aggregated \$178,000,000. The shipments of stocker and feeder cattle during 1914 amounted to \$50,000,000. Kansas City ranks first as a mule market. It ranks first in the sale of yellow-pine lumber and third as a general lumber market, this business amounting to \$40,000,000 a year. Its coal business is extensive and amounts to \$28,000,000 a year, and its lime and cement business to \$13,500,000 a year. Greater Kansas City has approximately 1200 factories, with a cash investment of \$100,000,000. The value of the products of these factories in 1914 was \$319,000,000, and the employees numbered 40,000. The greater city ranks tenth in the value of manufactured output and is rapidly growing as a manufacturing centre.

The government is vested in a mayor, elected biennially, a bicameral council, and administrative departments as follows: board of park commissioners, appointed by the mayor; board of public works, board of public welfare, and chief and assistant chief of the fire department, appointed by the mayor, subject to the consent of the council, board of police commissioners, consisting of the mayor, ex officio, and two members appointed by the Governor of the State; a school board, chosen by popular election. The city spent in 1914, in maintenance and operation, \$3,910,549, the main items of expenditure being \$483,877 for the fire department, \$475,847 for the police department, \$1,206,869 for the water works, \$186,433 for street cleaning, \$217,243 for street lighting, \$320,357 for health conservation, \$110,993 for parks and gardens, \$140,968 for charity and corrections. In addition to the above there was spent for schools, including new buildings, \$2,856,954. The net public debt Jan. 1, 1915, was \$4,158,000, and the assessed value of all taxable property was \$189,844,810. The water-works system has cost to date approximately \$10,000,000.

The first permanent settlement at Kansas City was made about 1820 by a small company of French fur traders, headed by François Chouteau. In 1838 the town was laid out, and in 1850 it was incorporated under the name Town of Kansas. This name was changed to Kansas City in 1889. It is popularly supposed that Kansas City took its name from the State of Kansas, but that is an error. The earliest settlement was called simply Kansas, originally spelled Kanzas, for the Kansas Indians, who were called by the French fur traders Kahns. All of the territory to the west was, at that time, known as the Nebraska Territory, and the name Kansas applying to the State came considerably later and probably from the same source as the name of the city. The first post office was established in 1845, the first telegraph entered the city Dec. 20, 1858, and the first newspaper, the *Kansas Ledger*, was printed in 1851. Ground for the first railroad in Kansas City was broken July 25, 1860. This was called the Pacific Railway, which afterward became the Missouri Pacific. The first passenger train

from the east entered Kansas City over this road on Sept. 25, 1865. Construction for the first railroad west of the Missouri River was started at Kansas City on Aug. 10, 1863, by the Kansas Pacific Railroad Company, now known as the Union Pacific Railroad Company, and the first passenger train went out of Kansas City for a short distance over this road on Nov. 28, 1864. Pop., 1860, 4418; 1870, 32,260; 1880, 55,785; 1890, 132,716; 1900, 163,752; 1910, 248,381; 1914, 281,911. Of the population, 61.8 per cent are white of native parents, 18.3 per cent white with foreign or mixed parents, and 9.5 per cent negro.

KANSAS INDIANS. A Siouan tribe. See KAW.

KANSAS-NEBRASKA BILL. In American history, a bill passed in 1854 by the United States Congress for the organization of the Territories of Kansas and Nebraska. Upon the admission of Missouri into the Union in 1821, the vast region lying between that State and the Rocky Mountains was left unorganized. Stephen A. Douglas introduced a bill for this purpose in the House in December, 1844, and bills in the Senate in March, 1848, and December, 1848, but no action was taken by either House. Finally, in February, 1853, a bill for the organization of the "Territory of Nebraska" passed the House, but was not acted upon by the Senate. On Jan. 4, 1854, Douglas, chairman of the Senate Committee on Territories, reported from that committee a new bill, accompanied by an explanatory report. The bill contained the provisions usually embodied in bills for Territorial organization, and in addition prescribed that "if any portion thereof, when admitted as a State or States, 'shall be received into the Union with or without slavery, as their constitution may prescribe at the time of their admission'" The report, however, went further and maintained that the compromise measures of 1850 had established principles which should govern all future legislation on similar subjects, and in particular had established the principle that "all questions pertaining to slavery in the Territories, and in the new States to be formed therefrom, are to be left to the decision of the people residing therein, by their appropriate representatives, to be chosen by them for that purpose." This, the so-called principle of "popular sovereignty," would, if strictly applied, obviously have nullified the essential part of the Missouri Compromise of 1820 (qv), which directly prohibited slavery north of lat. 36° 30'. On January 23 Douglas introduced a new bill, embodying an amendment which had been proposed by Senator Dixon, of Kentucky, on the 18th. This new bill provided that the Territory was to be divided into two parts to be called Kansas and Nebraska, and stated specifically that the slavery restriction of the Missouri Compromise, "being inconsistent with the principle of non-intervention by Congress with slavery in the States and Territories, as recognized by the legislation of 1850, commonly called the compromise measures, is hereby declared inoperative and void, it being the true intent and meaning of this act not to legislate slavery into any Territory or State, nor to exclude it therefrom, but to leave the people thereof perfectly free to form and regulate their domestic institutions in their own way, subject only to the Constitution of the United States." The bill occasioned a

prolonged and acrimonious debate, centring upon the abrogation of the slavery restriction of the Missouri Compromise, but finally passed the Senate on March 3 by a vote of 37 to 14, despite the vigorous opposition of such men as Sumner, Chase, Everett, Wade, Bell, and Seward. After a long debate the bill, slightly amended, passed the House, on May 8, by a vote of 113 to 100. The Senate agreed to the House amendments on the night of May 22, and the bill became a law, by President Pierce's signature, on May 30. The combined Territories, thus organized comprised a region which now constitutes Kansas, Nebraska, Montana, North Dakota, South Dakota, Wyoming, and part of Colorado—a total area of nearly 500,000 square miles.

The Kansas-Nebraska Bill is chiefly significant in American history from its having caused a renewal of the contest between the North and the South over the slavery question, which had been regarded as settled, for many years at least, by the compromise measures of 1820 and 1850. It stirred the passions of the people of both sections, gave rise to bitter and protracted controversies both in and out of Congress, and doubtless considerably hastened a resort to arms. The historian Rhodes has given the following estimate of the results of the passage of the bill: "It is safe to say that in the scope and consequences of the Kansas-Nebraska Act it was the most momentous measure that passed Congress from the day that the Senators and Representatives first met to the outbreak of the Civil War. It sealed the doom of the Whig party, it caused the formation of the Republican party on the principle of no extension of slavery, it roused Lincoln and gave a bent to his great political ambition. It made the Fugitive Slave Law a dead letter at the North, it caused the Germans to become Republicans, it lost the Democrats their hold on New England; it made the Northwest Republican; it led to the downfall of the Democratic party." Consult: A. B. Hart, *Documents Relating to the Kansas-Nebraska Act, 1854* (New York, 1894), Rhodes, *History of the United States from the Compromise of 1850*, vol. i (ib., 1896), Von Holst, *Constitutional and Political History of the United States*, vol. iv (Chicago, 1899), Smith, *Parties and Slavery*, in the "American Nation Series" (New York, 1906), Burgess, *The Middle Period 1817-1858*, in the "American History Series" (ib., 1908). The text of the bill may be found in the *United States Statutes at Large*, vol. x.

KANSAS RIVER. A river of Kansas, formed by the confluence of the Smoky Hill and Republican rivers in Geary County, whence it flows generally eastward and empties into the Missouri River at Kansas City (Map: Kansas, F 4). The basin comprises the richest portion of the State; most of it is under a high state of cultivation and produces a large variety of crops. The river's banks are sandy, and the channel generally is close to one shore or the other. The principal tributary is the Blue River, which rises in southeastern Nebraska, flows southeast and south, and joins the Kansas at Manhattan. Other tributaries are the Solomon and Saline. The total length including the Smoky Hill branch (which heads in eastern Colorado) is about 650 miles.

KANSAS STATE AGRICULTURAL COLLEGE. A coeducational institution of learn-

ing established in 1863 at Manhattan, Kans., under the provisions of the Congressional Land Grant Act of 1862. The college owns 748 acres of land near Manhattan, valued at \$185,000, and leases 522 acres in addition. The greater part of these grounds is used for experimental work and permanent orchard, forest, and garden plantations. The college also has at Hays, Kans., a branch agricultural experiment station with about 3600 acres of land. It also has branch stations at Garden City and Colby with 320 acres of land each, and at Dodge City and Tribune with 160 acres each, and leases a number of other tracts for demonstrational purposes. Four-year college courses are offered in agriculture; mechanical, civil and highway, electrical, and agricultural engineering; architecture; home economics; and general science. These courses lead to the degree of bachelor of science. A four-year course in veterinary medicine leading to the degree of doctor of veterinary medicine is given. A secondary school of agriculture is maintained which offers three-year courses in agriculture, home economics, and mechanic arts. Several short courses in home economics and agriculture are offered. In 1914 there were 190 on the board of instruction, the total attendance was 3027, including 64 graduates, 1598 in college courses, 370 in the summer school, and 658 in the school of agriculture. The endowment was \$491,746, and the income, \$871,145; the value of the buildings, \$965,974, and the total value of the college property, \$1,980,000. The library contained 47,400 bound volumes and 25,000 pamphlets. The college publishes a weekly, the *Kansas Industrialist*, and several series of bulletins. The president in 1914 was Henry J. Waters, LL.D.

KANSAS WESLEYAN UNIVERSITY. An institution for higher education, founded in 1885 at Salina, Kans., under the auspices of the Methodist Episcopal church. The institution opened for students in 1886. It maintains a college department, academic, education, elocutionary, and art departments, a college of music, and a college of commerce. The college of liberal arts offers classical, scientific, philosophical, and literary courses. The campus comprises 28 acres, and the principal buildings are the Administration Building, the Carnegie Science Hall, the Ladies' Dormitory, and Roach Home, the president's house. There are also laboratories, museums, and other buildings. The productive endowment of the university in 1914 was about \$105,000. The total enrollment in all departments was about 1400 students, and of these about 300 were in the academic and college departments. In 1915 a campaign to raise an endowment of \$500,000 was in progress. The library contains about 12,000 volumes. The president in 1914 was Rev. Robert P. Smith.

KANSU, kán'sŭ. The most westerly of the northern tier of Chinese provinces. It lies west of Shensi (q.v.), of which it originally formed a part, and is bounded on the north by the territory Ordos Mongols, and the Desert of Gobi, on the south by Szechwan, and on the southwest by Koko-nor (Map: China, H 4). From the time of K'ien-lung (1757) until the Mohammedan rebellion of 1865, its jurisdiction extended westward as far as Ili, and included the T'ien-shan Pe-lu, a distance of about 2200 miles from Lanchowfu, the capital of the province. Since the suppression of the rebellion all this

Central Asian territory has been formed into a new dominion known as *Sinkiang*, or the New Frontier, and this new province forms the western boundary of Kansu. Its area is estimated to be 125,400 square miles, and its population 5,000,000.

It is in the main mountainous, but a few fertile valleys are found where good crops are raised. From Lanchowfu westward level ground begins, and the narrow belt which forms the departments of Kanchowfu and Suchowfu is very fertile and produces much grain. In the 18 miles from Suchow to the fortified gate of the Great Wall, called Kia-yu Kwan (10 miles beyond which the wall comes to an end), agriculture becomes less general. Tobacco is the finest product of the province, which, however, is rich in minerals, and rivals Shansi in both the richness and the extent of its coal fields. It takes from the eastern provinces cotton and wheat and sends back tobacco (its own product), medicines, furs, skins, wool, felt, cattle, sheep, and mules, mostly the product of Koko-nor and the Mongol territory. The province derives its name from the first syllables of Kanchow and Suchow. Its export trade consists mainly of sheep and camel wool, which is sent by way of Mongolia to the city of Tientsin on the coast. A small amount of foreign goods comes into the province by way of Hankow. The opium poppy was formerly extensively grown and still is, but the authorities are taking strenuous measures against its cultivation.

KANT, *kánt*, IMMANUEL (1724-1804). One of the greatest and most influential German metaphysicians. He was the son of a saddler, of Scottish descent, and was born at Königsberg, April 22, 1724. He studied philosophy, mathematics, physics, theology, and other subjects at the university of his native town and, after spending nine years as a private tutor in several families, took his degree at Königsberg in 1755 and began to deliver lectures as privat-docent on logic, metaphysics, physics, politics, and mathematics, later he added courses on physical geography, anthropology, natural theology, and pedagogy, and one year he lectured on mineralogy. In 1762 he was offered the chair of poetry at Königsberg, but, though in some need of the salary, he wisely declined because he was not fitted for the place. The next year he obtained a position of assistant librarian on a salary of 62 thalers, and, though he had now become well known and greatly esteemed for his scholarship, he did not obtain a professorship until 1770, when he was appointed to the chair of logic and metaphysics, as an inducement to keep him in Königsberg, now that he had received calls to Erlangen and Jena. In 1778 he had a call to Halle, which he declined, to remain at Königsberg till his death, Feb 12, 1804. Kant's private life was uneventful. He was a bachelor and never traveled. He was a man of unimpeachable veracity and honor, austere in his principles of morality, though kindly and courteous in manner, a bold and fearless advocate of political liberty, and a firm believer in human progress. He sympathized with the American Colonies in their struggle against England, and with the French people in their revolt against monarchical abuses. As a lecturer he was popular. Herder says that his lectures were characterized by deep thought, wit, and humor. They were said to have been

much more dogmatic in tone than his writings and to have had moral and religious edification in mind as well as the imparting of information.

In philosophy he developed slowly. His views did not seem to take anything like final form till he wrote his greatest work, *Kritik der reinen Vernunft*, which was first published in 1781. By this time he had effected in philosophy what he called a Copernican revolution. "Our suggestion," he writes, "is similar to that of Copernicus in astronomy, who, finding it impossible to explain the movements of the heavenly bodies on the supposition that they turned round the spectator, tried whether he might not succeed better by supposing the spectator to revolve and the stars to remain at rest. Let us make a similar experiment in metaphysics with *perception*. If it were really necessary for our perception to conform to the nature of the object, I do not see how we could know anything of it a priori; but if the sensible object must conform to the constitution of our faculty of perception, I see no difficulty in the matter. Perception, however, can become knowledge only if it is related in some way to the object which it determines. Now here again I may suppose, either that the *conceptions* through which I effect that determination conform to objects, or that objects, in other words the experience in which alone objects are known, conform to conceptions. In the former case I fall into the same perplexity as before, and fail to explain how such conceptions can be known a priori. In the latter case the outlook is more hopeful. For experience is itself a mode of knowledge which implies intelligence, and intelligence has a rule of its own, which must be an a priori condition of all knowledge of objects presented to it. To this rule, as expressed in a priori conceptions, all objects of experience must necessarily conform, and with it they must agree" (Preface, trans by Watson). This passage shows that Kant started with the assumption that there is a priori synthetic knowledge, i.e., as he defined it, knowledge of universal and necessary truths. (See ANALYTIC JUDGMENT, A PRIORI) His mathematical training had taught him to regard the truths of mathematics as universal and necessary, while Hume had convinced him that any merely dogmatic assumption of universality and necessity was unwarranted. His problem now was how to escape dogmatism and yet justify the making of universal synthetic propositions, such as that two and two make four. This problem he solved to his satisfaction by making the world of experience in part a product of the intelligence that passes judgments. Space and time are forms of perception, i.e., the frameworks within one of which, at least, objects must be arranged before they can be perceived. They are conditions of the possibility of phenomena. This they could not be unless they were imposed upon phenomena by the perceiving agent. But not only must objects be perceived in order to be known, they must be conceived also. This act of conception is warranted only if objects, before being presented in experience, are worked into order by the same intelligence that in judgment unconditionally predicates this order of them. The forms of perception are space and time; the order produced by intellectual spontaneity is constituted by four great principles of synthesis—quantity, quality, relation, and modality—and each of these appears in three-

fold form. Hence we have 12 categories or pure conceptions of the understanding, viz.: (1) unity, (2) plurality, and (3) totality; (4) reality, (5) negation, and (6) limitation; (7) inherence and subsistence, (8) causality and dependence, and (9) community; (10) possibility and impossibility, (11) existence and nonexistence, and (12) necessity and contingency. These categories are discovered by examination of the functions of unity in judgment, i.e., by examination of the different ways in which the mind, in judging, predicates unity or order of the world of experience. Now the fundamental contention of Kant is that these categories must be principles employed in the construction of the world of experience if they are to be legitimately employed in the cognition of that world. This is the idealistic element in his system; the world we know is, in its form, a perceptual and intellectual creation, the work of the mind. He calls this idealism transcendental, i.e., it relates only to the conditions of the possibility of knowledge; it is not transcendent, i.e., it does not relate to any existences lying behind experience and therefore beyond the reach of knowledge. And yet, though the system is transcendental idealism, it is an empirical realism, i.e., it maintains that the real world of *experience* is a world *really* constituted in accordance with principles which science discovers. Thus, time is empirically real because the world *we know* is really a time world. But along with this empirical realism and transcendental idealism there goes hand in hand an agnosticism which denies the possibility of knowing anything whatever of another world of being—the world of things-in-themselves. These things-in-themselves affect our sensibility and thus give rise to sensations, which fall into the forms of perception and are organized by the categories into the world of experience. But what these things-in-themselves are we can never know. If reason attempts to make any assertion with regard to them, it falls into hopeless inconsistencies and inextricable confusions, paralogisms, and antinomies. And yet reason is ever striving to go beyond experience. The world of experience is never complete, it is a *progressus* and a *regressus ad infinitum*. But reason craves completeness. It has ideas which find no embodiment in experience, because “they demand a certain completeness which is beyond the reach of all possible empirical knowledge.” But neither may these ideas be thought to find embodiment in things-in-themselves, for in this case judgment would transcend its proper experiential limits. They are not empirically or transcendently real, but neither are they transcendently ideal, for they are not conditions of the *possibility* of knowledge. Thus excluded from *all* classes, Kant finds a function for them as *regulative principles* for the conduct of the understanding in its search for knowledge, telling us not to be satisfied in our attempts to reduce experience to order unless we should *complete* the systematization. But complete it we never can. The ideas are warnings “not to regard any single determination relating to the existence of things as ultimate.” But we may not substantiate the ideas by claiming that the completeness unattainable in experience is actual beyond experience. This would be transcendental subreption, and though natural and difficult to avoid, it may be under-

stood to be fallacious when it is seen that thus a *regulative* principle is changed into a *constitutive* principle. There are three such ideas—that of the absolute or unconditioned unity of the thinking subject, that of the absolute unity of the series of conditions of phenomena, and that of the absolute unity of the condition of all objects of thought whatever. The last, when substantiated and individualized, become the transcendental ideal, i.e., the idea of a totality of reality (*omnitudo realitatis*), an *ens realissimum*, *ens originarium*, *ens summum*, *ens entium*, all of which are epithets given by scholastic theology to God. “By such a use of the transcendental idea, however, theology oversteps limits set to it by its very nature.” All traditional proofs for the being of God, which Kant reduces to three—the ontological, the cosmological, and the physico-theological proofs (see GOD)—he criticizes as fallacious: “The Supreme Being is for purely speculative reason a mere ideal, but still a *perfectly faultless ideal*, which completes and crowns the whole of human knowledge. And if it should turn out that there is a moral theology, which is able to supply what is deficient in speculative theology, we should then find that transcendental theology is no longer problematic, but is indispensable in the determination of the conception of a Supreme Being” (Watson’s trans.). In his ethical works Kant does finally arrive at such a moral theology as the final postulate of morality.

His ethics is frequently called rigoristic, i.e., it refuses to : ‘...’ (1) moral value of natural inclination. ‘...’ is good but the good will, and the good will is the will to do an act because it is in accordance with duty. “Duty is the obligation to act from reverence for law.” The law is that “I must act in such a way that I can at the same time will that my maxim should become a universal law.” The obligation to obey this law is unconditional. The moral imperative is categorical. There are no *ifs* and *buts* in the case. It does not even depend upon the peculiar constitution of human nature. It is a necessary law for all rational beings, and as such a priori. “Its foundation is this, that rational nature exists as an end in itself.” Man thus imposes upon himself the universal system of laws to which he is subject, and “he is only under obligation to act in conformity with his own will.” This constitutes the autonomy of the will. But this autonomy is not correctly conceived unless correlated with the conception of a kingdom of ends, i.e., the systematic combination of different rational beings through the medium of common laws. The autonomy of any will is thus not capricious, but rational, its rationality consists in its ordered and systematic connection with other autonomous wills. “Morality, then, consists in the relation of all action to the system of laws which alone makes possible a kingdom of ends.” This whole conception of the categorical imperative is possible, says Kant, only if man’s will is not a mere phenomenon conditioned by causal laws. Freedom is thus a postulate of the moral order. We do not *know* ourselves to be free; for knowledge is possible only within the limit of experience. But we must *think* ourselves as free. “In thinking itself into the intelligible world, practical reason does not transcend its proper limits, as it would do if it tried to know itself directly

by means of perception. In so thinking itself, reason merely conceives of itself negatively as *not* belonging to the world of sense." "There is but a single point in which it is positive, viz., in the thought that freedom, though it is a negative determination, is yet bound up with a positive faculty, and, indeed, with a causality of reason which is called will."

This free causality of the will cannot be explained, for "we can explain nothing but that which we can reduce to laws, the object of which can be presented in a possible experience." "While, therefore, it is true that we cannot comprehend the practical unconditioned necessity of the moral imperative, it is also true that we can comprehend its incomprehensibility; and this is all that can fairly be demanded of a philosophy which seeks to reach the principles which determine the limits of human reason." But virtue or action in accordance with duty, though the supreme, is "not the whole or complete good which finite, rational beings desire to obtain. The complete good includes happiness." This involves "the union of virtue and happiness in the same person." But "the connection of virtue and happiness in a system of nature, which is merely an object of the senses, cannot be other than contingent, and therefore it cannot be established in the way required in the conception of the highest good." Such a union is possible only if there is "perfect harmony of the disposition with the moral law," but of this harmony "no rational being existing in the world of sense is capable at any moment of his life." Yet "such a harmony must be possible, for it is implied in the command to promote that object", hence we must assume "an infinite progress towards perfect harmony with the moral law," and this involves immortality as a postulate of morality. But "the moral law leads us to postulate not only the immortality of the soul, but the existence of God," for there must be a cause "able to connect happiness and morality in exact harmony with each other," and God is the only conceivable cause of this kind. Thus, the postulates of morality are God, freedom, and immortality. All this reasoning involves the assumption of two separate worlds—the world of sense, of phenomena, and the world of intelligible but unknowable realities. But Kant was not content to rest in this absolute separation. He tries to bring these two worlds together. The beauty and the seeming purposiveness of nature make it probable that mechanism, the principle of the world of experience as governed by the conception of cause, and teleology, the principle of the world of intelligible realities as a kingdom of ends, are not incompatible. They may be united in a single principle, which, however, because of the limitations of our reason, we cannot formulate.

It now remains to say something of Kant's place in the development of science. We have already seen that Kant's lectures were not confined to philosophy. Indeed, his services in the theory of science were probably as great as in the realm of philosophy. It is only necessary to refer to Kant's anticipation of Laplace (q.v.) in the view that the solar system has developed from a primitive gaseous material with rotatory motion. Kant went further and suggested that the fixed stars might be systems, like the solar system, which have arisen in the same way. This theory was worked out in the *Allgemeine*

Naturgeschichte und Theorie des Himmels (1755) 44 years before the appearance of the *Mécanique céleste* (1799–1825) of Laplace.

In addition to the works mentioned by name above, Kant wrote numerous books and essays, among the most important of which are the following: *De Mundi Sensibilis atque Intelligibilis Forma et Principis* (1770); *Prolegomena zu einer jeden künftigen Metaphysik, die als Wissenschaft wird auftreten können* (1783); *Grundlegung zur Metaphysik der Sitten* (1785); *Metaphysische Anfangsgründe der Naturwissenschaft* (1786); *Kritik der praktischen Vernunft* (1788), *Kritik der Urtheilskraft* (1790) (these last two works, together with the *Kritik der reinen Vernunft*, contain the gist of Kant's whole philosophy); *Die Religion innerhalb der Grenzen der blossen Vernunft* (1793); *Metaphysik der Sitten* (1797). In addition there are works on physical geography, neural pathology, æsthetics, ethnography, anthropology, history, criticism, meteorology, politics, logic, and pedagogy. Kant's complete works were edited by K. Rosenkranz and F. W. Schubert (12 vols., Leipzig, 1838–42), by G. Hartenstein (8 vols., ib., 1867–69), and by Kirchmann (8 vols., Berlin, 1808–73). A superb edition, published under the auspices of the Royal Prussian Academy of Sciences, began to appear in 1900 (Berlin). Among English translations of Kant's works mention should be made of the *Critique of Pure Reason*, translated by J. M. D. Meiklejohn (London, 1854) and by Max Müller (2d ed., ib., 1896); *Prolegomena and Metaphysical Foundations of Natural Science*, translated by E. B. Bax (ib., 1883, 1909); *Philosophy of Law* (Edinburgh, 1887) and *Principles of Politics* (ib., 1891), both translated by W. Hastie; *Critique of Judgment*, translated by J. H. Bernard (London, 1892); *The Philosophy of Kant as Contained in Extracts from his own Writings*, selected and translated by J. Watson (New York, 1894, new ed., 1908); *Critique of Practical Reason, and Other Works on the Theory of Ethics*, translated by T. K. Abbott (London, 1898, 6th ed., 1909); *Cosmogony*, translated by W. Hastie (ib., 1900); *Dreams of a Spirit Seer*, translated by E. F. Goerwitz (ib., 1900); *Educational Theory of Kant*, translated by E. F. Buchner (Philadelphia, 1904); *Kant's Critique of Æsthetic Judgment*, translated, with seven introductory essays, by J. C. Meredith (Oxford, 1911); *Eternal Peace, and Other International Essays*, translated by W. Hastie (Boston, 1914).

Bibliography. J. C. Fichte, "Kant's System of Transcendentalism," in *New Exposition of the Science of Knowledge* (New York, 1869); J. P. Mahaffy and J. H. Bernard, *Kant's Critical Philosophy for English Readers* (London, 1872–74; new ed., 2 vols., 1889); R. Adamson, *On the Philosophy of Kant* (Edinburgh, 1879); J. Watson, *Kant and his English Critics* (Glasgow, 1881); J. H. Stirling, *Text-Book to Kant* (Edinburgh, 1881); H. Vaihinger, *Kommentar zu Kants Kritik der reinen Vernunft* (Leipzig, vol. i, 1881; vol. ii, 1892); G. S. Morris, *Kant's Critique of Pure Reason* (Chicago, 1882); E. Caird, *Critical Philosophy of Kant* (New York, 1889); L. Stählin, *Kant, Lotze, und Ritschl* (Leipzig, 1889); R. M. Wenley, *Outline Introductory to Kant's Critique* (New York, 1897); F. Paulsen, *Immanuel Kant, sein Leben und seine Lehre* (Stuttgart, 1898; Eng. trans., New York, 1902); Kuno Fischer, *Immanuel*

Kant und seine Lehre (4th ed., Heidelberg, 1898-99); G. Simmel, *Kant* (Leipzig, 1904); II Sidgwick *Philosophy of Kant* (New York, 1905); C. B. Renouvier, *Critique de la doctrine de Kant* (Paris, 1906); Borowski, *Immanuel Kant, ein Lebensbild* (Halle, 1907); H. A. Prichard, *Kant's Theory of Knowledge* (New York, 1909); R. M. Wenley, *Kant and his Philosophical Revolution* (ib., 1911); H. S. Chamberlain, *Immanuel Kant, a Study and a Comparison with Goethe, Leonardo da Vinci, Bruno, Plato, and Descartes*, translated from the German by Lord Redesdale (ib., 1914). For bibliography consult Adickes, *Bibliography of Writing by Kant and on Kant* which have appeared in Germany up to the End of 1887," in the *Philosophical Review* (Boston, 1892 et seq.). *Kant-Studien*, a periodical devoted to the study of Kant, has been irregularly issued since 1897.

KANTEMIŔ, kân'tyê-mêr'. A noble family of Moldavia, three of whose members attained the dignity of Prince of that country. The most celebrated was DEMETRIUS KANTEMIŔ (1673-1723), who became Prince in 1710. He entered into an alliance with Peter the Great of Russia for the purpose of throwing off the Turkish supremacy. Peter's unfortunate campaign beyond the Pruth (1711) compelled Demetrius to flee to Russia, where he was treated with the most distinguished honor and played a part in the intellectual life of the capital. He was one of the founders of the St. Petersburg Academy and the author of several works on Moldavian and Turkish history, among which are *Descriptio Moldaviae*, *Hronicul Romino-Moldovlahilor* (incomplete), and *Historia de Ortu et Defectione Imperii Turcici*. His son was the well-known Russian satirist Antioch Kantemir (q.v.).

KANTEMIŔ, ANTIOKH DMITRIYEVITCH (1708-44). A Russian satirical poet and diplomatist. Of Moldavian descent, he was born at Constantinople, was brought up in Russia, and at an early age became an officer of the Preobrazhenski Regiment, owing to the special interest Peter the Great took in him. At the age of 23 he was sent as Minister to Great Britain and in 1738 to France, where he met Maupertuis, Montesquieu, and other writers. A man of considerable erudition and wide culture, he was a great favorite at his diplomatic posts. An ardent lover of the classics, he made numerous translations from Horace, Juvenal, Anacreon, and others, and himself wrote satires, in which, like Horace, he lashes the vices and shortcomings of contemporary society, but not individuals. His best-known satire, *To my Intellect*, derides the stupidity of striving after the superficial gloss of external civilization and attacks the obscurantists of the day. With Kantemir begins the pseudoclassical period of Russian literature, and his labors in the way of versification have an historical value, as his verses, though a great improvement on their predecessors, still keep the syllabic metre, utterly foreign to the spirit of Russian, which knows no long and short vowels, but stress accent only. His works were published in 1762. His *Satires* first appeared in a French translation (London, 1749), from which was made the German translation by Spilcker (Berlin, 1752). The best edition is by Yefremov (St. Petersburg, 1867), with introduction by Stoyunin.

KANURIS, kâ-nûrêz. Sudanese Negroes

dominant in Bornu and Kanem, Chad Basin region, Central Africa. They are slightly mixed with Hamites of the desert and have negroid features, while their speech is modified by Tibbu. There are three and a half millions of them, divided into many tribes. All these are Mohammedanized. They are described as melancholy, dejected, and brutal. With their broad faces, wide nostrils, and large bones, the Kanuris make a far less agreeable impression than the Hausas, especially as the women are among the ugliest in all Negroland. See SUDAN, *Ethnology*.

KAOLIANG. See ANDROPOGON.

KAOLIN, kâ'ô-lîn (from Chin. *Kaoling*, high ridge, the name of a hill in China, where the clay is found). A term properly applied to white-burning residual clays, but incorrectly and loosely used by some to include all white-burning clays. Kaolin proper is formed primarily by the weathering of granite, or pegmatite; less frequently from schist, feldspathic quartzite, and even limestone. In all except the last, the change involves the decomposition of feldspar, resulting directly or indirectly in the formation of some hydrous aluminium silicate, often identifiable as kaolinite. Kaolin is a soft clay, of variable but usually low plasticity, burning to a pure white color, and of high refractoriness. The deposits usually are worked by open cuts or shallow shafts, and the crude clay is prepared for the market by freeing it of quartz and other impurities by a washing process. An analysis of washed kaolin from North Carolina shows the following composition in per cent: SiO₂, 45.70; Al₂O₃, 40.61; Fe₂O₃, 1.39; CaO, 0.45; MgO, 0.09; Na₂O, K₂O, 2.82; H₂O, 8.98; moisture, 0.35. The chief use of kaolin is for the manufacture of white earthenware and porcelain and also wall tile, for which purpose it is mixed with varying amounts of quartz, feldspar, and ball clay (q.v.). For filling paper the kaolin must be white in its unburned condition, sufficiently plastic, and free from grit. In the United States kaolin is mined in several of the Eastern States, including Pennsylvania, Delaware, North Carolina, and Georgia. The most productive deposits are those of Cornwall, England. In 1912 the United States output of kaolin was 25,852 short tons, valued at \$220,747. The production of paper clay in 1912 was 119,857 short tons, valued at \$522,924, but all of this is not true kaolin. The total imports into the United States in the same year were 278,276 tons, valued at \$1,629,105, mostly from England, France, and Germany. Consult Ries, *Clays, Occurrence, Properties, and Uses* (New York, 1908), and id., "Origin of Kaolin," in *Transactions of the American Ceramic Society*, vol. xiii (Columbus, Ohio, 1911). See CLAY.

KAOLINITE, kâ'ô-lîn-îf. A hydrated aluminium silicate which forms the chief constituent of clay. See CLAY.

KAPELLMEISTER, kâ-pêl'mts-têr (Ger., chapelmaster). The director of music and choir trainer in a royal or ducal palace. The position was regarded as one of much honor and of considerable importance. To-day the name "kapellmeister" is used only as synonymous with conductor (q.v.).

KAPILA, kâ'pê-lâ. An ancient Hindu philosopher renowned in Sanskrit literature as the founder of the Sankhya system of rationalistic philosophy. According to Buddhistic legends he must have lived before the time of Buddha, or

not later than the middle of the sixth century B.C. His name is closely associated with Kapilavastu, in northeastern India, where Buddha was born. There seems to be no just reason for doubting the reality of Kapila's existence, as has been done by some, even though the so-called *Sāmkhyasūtras* be considered to be of much later origin than his time. His teaching was entirely dualistic, admitting only two things, both without beginning and end, the realm of spirit and of matter. For Kapila as a historic personage, consult Garbe, *Sāmkhya und Yoga* (Strassburg, 1896), and the edition of sutras ascribed to Kapila, together with the commentary by Garbe, *Sāmkhya-pravacana-bhāṣya* (Cambridge, Mass., 1895). Consult Macdonell, *History of Sanskrit Literature* (London, 1913). See SANKHYA.

KAPNIST, káp'nist, VASILII YAKOVLEVITCH (1756-1823). A Russian poet, born in Obukhovka. He was a friend of Derzhavin (qv) and a member of the Russian Academy. Besides some unimportant satires, odes, and epigrams, he wrote *Yabeda* (Pettifoggery), a comedy dealing with the abuses of Russian justice, written in alexandrines. The play had an immediate success, and many of its characters and lines are proverbial in modern Russia. It was for a short time suppressed by Czar Paul, and Kapnist narrowly escaped Siberian exile.

KAP'ODISTRAS. President of the Greek Republic. See CAPO D'ISTRIA.

KAPOK'. A Javanese fibre plant. This name is applied to several species of trees belonging to the family Bombacaceæ, formerly included in the Malvaceæ, the most common ones being species of *Ceiba* and *Bombax*. In Java *Ceiba pentandra* is the most common species. In Africa in addition to this species several species of *Bombax* yield kapok. The fibre is silky, but is not adapted to spinning. Its principal use is for filling pillows, cushions, mattresses, and similar articles, the exports from Java being about 40,000 bales annually. The unusual elasticity of the fibre prevents its permanent matting when used as a filler. See ERTODENDRON.

KAPOSI, kô'pô-shî, MORITZ (1837-1902). An Austrian physician and dermatologist, born at Kaposvár. He was educated at the University of Vienna (1856-61), where he became docent in dermatology and syphilis (1866), and was associated with Hebra in his clinic (1866-71) and succeeded him in 1881 as its head. His great work in collaboration with Hebra was *Handbuch der Hautkrankheiten* (1872-76). His own works on cutaneous diseases include: *Die Syphilis der Schleimhaut der Mund-, Nasen- und Rachenhöhle* (1866); *Die Syphilis der Haut und der angrenzenden Schleimhäute* (1872-75); *Pathologie und Therapie der Hautkrankheiten* (5th ed., 1899); *Pathologie und Therapie der Syphilis* (1891); *Handatlas der Hautkrankheiten* (1898-1900).

KAPOSVÁR, kô'pôsh-vár. The capital of Somogy County, southwest Hungary, 28 miles northwest of Fünfkirchen (Map: Austria-Hungary, E 3). It is a garrison town, is well built, has a Romanesque cathedral, a convent, a state Gymnasium, a county hall, and a hospital. Cement works, a sugar refinery, wine presses, brick kilns, and a tobacco factory are its chief industrial establishments, while stock raising is largely carried on in the neighborhood. It is an important horse market. Pop., 1900, 18,218; 1910, 24,124.

KAPP, káp, FRIEDRICH (1824-84). A German-American publicist and historian, born at Hamm, Westphalia. He studied law at the universities of Heidelberg and Berlin and practiced in the courts of Hamm and Unna until 1848. Engaging in the revolutionary rising at Frankfurt in September of that year, he was forced to take refuge in Paris. Later he went to Geneva and in 1850 came to New York, where he practiced his profession until his return to Germany in 1870. He acquired great influence among the German-speaking people of New York, became interested in the slavery question, and was a Republican presidential elector in 1860. As a result of his efforts to protect immigrants, he was appointed one of the Emigration Commissioners of New York in 1867 and wrote a book, *Immigration* (1870), showing the economic value of foreign immigration. After his return to Germany he was in 1872 elected a member of the Reichstag by the National-Liberal party. He wrote much both in German and English, and his books are based upon careful research. His works include: *Die Sklavenfrage in den Vereinigten Staaten* (1854); *Leben des amerikanischen Generals F. W. von Steuben* (1858; Eng. ed., New York, 1859); *Geschichte der Sklaverei in den Vereinigten Staaten* (1861); *Leben des amerikanischen Generals Johann Kalb* (1862; Eng. ed., New York, 1870); *Geschichte der deutschen Einwanderung in Amerika* (1868); *Friedrich der Grosse und die Vereinigten Staaten* (1871); *Aus und über Amerika: Erlebnisse und Tatsachen* (1876). He also wrote on the soldier traffic by German princes in the American Revolution.

KAPP, GISEBERT (1852-). A German-English electrician, born at Mauer, near Vienna, and educated at the Zurich Polytechnic. He was engaged as mechanical engineer in Augsburg, Vienna, and Pola, in 1875 went to England, and in 1882 was made director in the Crompton Works at Chelmsford. In 1894 he became lecturer on electrical engineering at Charlottenburg. After 1905 he was professor of electricity at the University of Birmingham, England. In 1886-88 he was Telford medalist, and he served as president of the Institution of Electrical Engineers and in 1913 as president of the engineering section of the British Association. His electrical inventions include several measuring devices. Kapp wrote: *Electric Transmission of Energy* (1886); *Dynamos, Alternators, and Transformers* (1893); *Transformatoren für Wechselstrom und Drehstrom* (2d ed., 1900); *Elektromechanische Konstruktionen* (2d ed., 1902).

KAPPEL, káp'el. A village in the Canton of Zurich, Switzerland. It is noted chiefly as the place where the reformer Zwingli was killed, in 1531, in a battle between Protestants and Roman Catholics. The village contains a monument erected to his memory. Pop., 1900, 697; 1910, 688.

KAPTCHAK. See KIPTCHAK.

KARA, kâ'râ. A short river of north Russia, forming the boundary line between European and Asiatic Russia (Map. Russia, K 1). It falls into the Kara Sea, an inlet of the Arctic Ocean.

KARABACEK, kâ'râ-bâ'chêk, JOSEPH VON (1845-). An Austrian Orientalist. He was born at Graz and became professor of Oriental history and allied subjects in the University of Vienna. His writings include: *Bei-*

träge zur Geschichte der Mazjaditen (1874); *Die persische Nadelmalerei Susandschird* (1881); and the books dealing with the Archduke Rainer Papyrus, *Der Papyrusfund von El Faiyum* (1882), *Katalog der Theodor Grafachen Funde in Aegypten* (1883), and *Ergebnisse aus dem Papyrus Erzherzog Rainer* (1889).

KARACHI, ká-rá'châ, or **KURRACHEE**. An important seaport, the capital of Karachi District and of the Sind Division, Bombay Presidency, British India (Map: India, A 4). It is situated in the Indus Delta, 90 miles southwest of Hyderabad. It is a terminus of the Northwestern Railway. As the mouth of the Indus (q.v.) is barred by sand banks, Karachi is virtually the terminus of the traffic of that river and has become, as predicted by Sir Charles Napier, "the gateway of Central Asia." Its spacious harbor, covering 237½ acres, is protected by extensive breakwaters. The wharves, docks, and landing place are on the former island of Kiamari, now connected with the city over the Napier mole, 3 miles long. The public buildings comprise the government house, municipal offices, courthouse, Bank of Bombay, Bank of India, Sind College, high school, Frere Hall, Masonic Hall, markets, a dispensary and hospital. It has a high school for Mohammedans, a convent school, and an engineering school. The cantonments on the east contain the artillery barracks and arsenal, and the Napier barracks, with 1500 men. A good road 3 miles long connects with Clifton, on the south, which has a pier and an extensive sandy beach, frequented by excursion parties and noted for the turtle hunting it affords during the autumn season. Seven steamship lines assist commerce, the city has annually export trade amounting to almost \$50,000,000 and is the third seaport of India. Karachi has also an active inland trade with Kashmir, Turkestan, Afghanistan, and Tibet. The chief manufactures are carpets and the famous Sind silverware. It has three large cotton compresses, the workshops of the Northwestern Railway; also extensive fisheries and oyster beds. It exports hides, tallow, oil, wool, cotton, wheat, and tea, and imports metals, hardware, silk, and woolen goods. It is the seat of a United States consular agent. The city's growth and development date from its cession to the British government by the Talpur Amirs in 1843; the previous fort and village had existed since 1725. Pop., 1901, 116,663; 1911, 151,903. The district has an area of 11,970 square miles; pop., 1901, 446,513; 1911, 521,721. Consult Baillie, *Kurrachee, Past, Present, and Future* (London, 1890), and J. F. Brunton, "Karachi," in *Royal Society of Arts, Journal*, vol. lxi (London, 1913).

KARADŽIC. See **KARAJITCH**.

KARAGAN, kár-à-gân (Russ. *karagan*). A fox of Tartary; perhaps identical with the corsac (q.v.).

KARAGASS, ká-rà-gäs'. A people of Samoyed stock in the District of Nizhni Udinsk, Government of Irkutsk, Siberia. They are practically extinct, having but little over 200 in 1888, although they still distinguished five clans. Consult an account of the Karagass in *Globus* (Brunswick, 1887); the Russian account by Salesskj is resumed in the *Archiv für Anthropologie* (ib., 1901).

KARA GEORGE. A Servian patriot. See **CEBENY GEORGE**.

KARAGEORGEVITCH, ALEXANDER. See **ALEXANDER KARAGEORGEVITCH**.

KARAHISSAR, ká-rá'hís-sár'. A city of Asiatic Turkey. See **AFTUN-KARA-HISSAR**.

KARAIKAKIS, ká-rés'ká-kés, **GEORGIOS** (1782-1827). A Greek soldier, born at Agrapha. He joined Ali Pasha, of Janina, but left him in his last war with Turkey and fought on the side of the Turks. In the revolution he sided with the Greeks and fought bravely. He quarreled with the provisional government, only to come to its aid after Missolonghi (1826). He won a great victory at Arachova and was mortally wounded in an attempt to capture the Acropolis (1827). Consult his biography by Paparrhigopoulos (Athens, 1877).

KARAITES, ká'rá-its. See **QARAITES**.

KARAJAN, ká'ra-yán, **THEODOR GEORG VON** (1810-73). An Austrian philologist born in Vienna, of Greek parentage. He studied in his native city, was employed in the Department of War and Finance from 1829 to 1841, and thereafter in the Imperial library, of which he was made custodian in 1854. He became a member of the Academy of Sciences in 1849, its vice president in 1851, and its president in 1866. In 1850 he was given the chair of the German language and literature at the University of Vienna, but was obliged to relinquish it at once on account of religion. Among his many important philological works, his editions of specimens from early German literature deserve especial mention, notably, *Frühlingssgabe für Freunde alterer Litteratur* (1839), *Michael Behaims Buch von den Wiencrn* (1843); *Deutsche Sprachdenkmale des zwölften Jahrhunderts* (1846), *Zwei bisher unbekannte Sprachdenkmale aus heidnischer Zeit* (1858); *Abraham a Sancta Clara* (1867). Consult article by Vahlen in the *Almanach der Wiener Akademie*, pp. 195-213 (1874).

KARAJITCH, or **KARADŽIĆ**, ká-rá'jěch, **VUK (WOLF) STEFANOVITCH** (1787-1864). The founder of the literary language of the Serbo-Croats and of their literature. He was born at Trshitch in Servia. His parents were, however, Montenegrins. He learned to read from letters scribbled on shotgun paper with a reed pen dipped in a solution of gunpowder. At 17 he was the "most learned lad" in the neighborhood. At Karlowitz (Austria) he learned Latin, Old Church Slavonic, and German. Three years later he returned to Servia, served as scribe in the Belgrade Council, was later made judge, but had to leave for Vienna in 1813 after the Turks quelled the rising in Servia. In Vienna he wrote an open letter to Kara George, leader of the unsuccessful uprising, *On the Fall of Servia*. Urged on by the Slavic scholar Kopitar (q.v.), Karajitch published a collection of Servian popular songs in 1814 (*Mala prostonarodna Sloveno-Srbska Pjesmarica*, 2d ed., 1815) and then *A Grammar Based on the Popular Tongue* (*Pismenica Srbskoga jezika po govoru prostoga naroda*, Vienna, 1814). In 1818 he published his *Servian Dictionary Explained in German and Latin* (new enlarged ed., 1852), important from both the lexicographic and the folkloristic points of view. A revised edition of his *Grammar* was prefixed to the *Dictionary* and then translated by Jakob Grimm (q.v.) in 1824. In his *Grammar* and *Dictionary* Karajitch abandoned the Cyrillic alphabet for the Latin with diacritic marks borrowed from the Czech alphabet, and a few

new letters, and used a strictly phonetic spelling. He also urged the adoption of the popular tongue in place of the archaic style used by the writers of his time. He visited Russia in 1818, made many friends among the Russian scholars, and then returned to Serbia to establish the primary schools on a more rational basis. From 1826 to 1834 he edited the annual *Danica* (Morning Star). In 1829-30 he codified Servian law for Prince Milosh, but soon left Serbia, owing to the Prince's despotism. He traveled in Dalmatia, Montenegro, and Croatia until 1839, when he returned to his fatherland. The rich material collected in his wanderings was embodied in *Popular Servian Proverbs* (1835: 2d ed., Vienna, 1849), *Popular Servian Songs* (*Srpske Narodne Pjesme*, vols. 1-III, Leipzig, 1823; vol. IV, Vienna, 1823), followed by *Servian Songs from Herzegovina* (1866), *Servian Folk Tales* (*Srpske Narodne Pripovetke*, 1853), and *Examples of the Serbo-Slovenian Languages* (1857). He also wrote some historical works (*Miloš Obrenović*, 1827) and translated the New Testament into Servian for the British Bible Society (1847). Many of the songs collected by Karajitch have been translated into German (by Talvj, Gerhard, and others).

KARAKAL. See CARACALU.

KARAKORAM (ka'ra-kō'rūm) (or MUSTAGH) MOUNTAINS. A range of Central Asia, extreme northwestward extension of the Pamir system (Map: India, C 1). It branches off from the Himalayas proper near the headwaters of the Indus and extends along the right bank of that river through the whole of its northwest course, covering the northern half of the Province of Kashmir, India. Its northwest termination is at the Pamir, where it meets the Hindu Kush. It consists of a number of lofty ridges, and the whole region is very elevated, the valley bottoms being 10,000 to 15,000 feet above sea level. The numerous peaks include some of the highest in the world, and from them great glaciers flow. Mount Godwin-Austen is 28,265 feet above the sea, and there are at least four others with a height above 25,000 feet. Some of the valleys are connected by lofty passes, one of which, the Karakorum Pass, in lat 35° 30' N., long. 77° 50' E., has an altitude of 18,550 feet.

Bibliography. Sir W. M. Conway, *Climbing and Exploration in the Karakoram-Himalayas* (2 vols., London, 1892); Oscar Eckenstein, *The Karakorams and Kashmir An Account of a Journey* (ib., 1896); F. B. Workman, *In the Ice World of Himalaya* (ib., 1901); id., *Ice-Bound Heights of the Mustagh* (New York, 1908); id., *Call of the Snowy Hissar* (London, 1910); Filippo de Filippi, *Karakoram and Western Himalaya, 1909: An Account of the Expedition of H. R. H. Prince Luigi Amadeo of Savoy, Duke of the Abruzzi* (2 vols., ib., 1912).

KARAKORUM, kā'ra-kō'rūm (Mongol *Kara-Kuren*, black camp). The capital of the Mongol Empire before the establishment of the court at Peking. It is situated near the Orkhon River in Mongolia, north of the Desert of Gobi, not far from the present Urga. It was one of the principal camps of Genghis-Khan and became the official capital of the Empire in 1234. It was visited by Marco Polo, but its situation was unknown to Europeans until 1889, when it was discovered by the Russian explorer Yadrintsev. Only the ruins now remain, spread over a space 6 miles in circumference. Karakorum was con-

nected by canals with the Jirmanta River. In 1902 this region was again visited by C. W. Campbell.

KARAMAN, kā'ra-mān', or **CARAMAN**. A town of Karamania, in the southern part of Asia Minor (Map: Turkey in Asia, B 3). It contains a mediæval castle, two mosques, and ruins of an old medresse, or college, showing traces of remarkable architectural beauty. The chief products of the town are coarse cotton and woolen stuffs, and hides. It is connected by rail with Constantinople, via Konia, and the trade of the town is progressing in consequence, the transit trade being considerable. The population is estimated at 9000. Karaman is the ancient Laranda.

KARAMANIA, kā'ra-mā'nē-ā, or **CARAMANIA**. A region in south Asia Minor, covering the central and eastern part of the modern Turkish Vilayet of Konieh (Map: Turkey in Asia, B and C 2). It reaches Lake Tuz Tcholli in the north, the Taurus Mountains in the south, the Sultan Dag in the west, and the outliers of the Anti-Taurus in the east. It is an elevated plain, with a barren, sandy soil and a few short rivers, which lose themselves in the desert or empty into the large salt lakes around the borders of the region. The climate is hot and dry in the summer and raw with some rain in the winter. In ancient times a very rich district, it is now sparsely settled by nomadic tribes whose chief occupation is cattle raising. Karamania was subjugated by the Turks in the fourteenth and fifteenth centuries.

KARAMNASSA, kā'ram-nās'sā. A river in the Province of Bengal, British India. After a course of about 150 miles it enters the Ganges from the right. It is subject to floods and has been known to rise 25 feet in a night. The river is repugnant to all caste Hindus, who have to be carried over without being touched by the water, and its name signifies "the destroyer of religious merit."

KARA MUSTAPHA, kā'ra mus'tā-fī (?-1683) A grand vizier of Turkey. He was the son of a spahi and was educated by Mohammed Kiuprili. After the death of Ahmed Kiuprili in 1676, Mohammed IV made Kara Mustapha Grand Vizier. He proved to be incapable and was defeated repeatedly in the various wars. He is especially remembered for his siege of Vienna in 1683, where, in order not to be compelled to share the prospective booty with his soldiers, he delayed the assault so long that John Sobieski of Poland arrived on the scene in time, and together with the German princes inflicted a crushing defeat upon the Turks. The Sultan finally ordered Kara Mustapha to be strangled.

KARAMZIN, kā'ram-zēn', NIKOLAI MIKHAILOVITCH (1766-1826). A Russian historian and novelist, born near Simbirsk on the Volga. His father, an officer of Tatar descent, sent him to Moscow, where he learned French and German as well as a little English and Italian. In 1781 he entered the army, but left it two years later to take up literature as a profession. He worked with Novikov (q.v.) during 1785-88 and went abroad in 1789. The 18 months he spent in France, Germany, Switzerland, and England were described in his *Letters of a Russian Traveler* (1790-92, in the *Moscow Journal* of which he was editor; published separately in 1797-1801 in 6 vols.). These letters, which produced at the time a great impression, were modeled on

Sterne's *Sentimental Journey* and introduced to Russia a new literary style. In the same periodical appeared also his first novels, of which *Poor Liza* (1792) is the most important. Among the others *Natalya, the Boyar's Daughter* (1792) and *Martha the Viceregent* (1793) were over-sentimental tales dealing with a sort of Arcadian shepherds under Russian names; yet their success was great. When the publication of the *Moscow Journal* had to be discontinued owing to relentless censorship, Karamzin published the *Pantheon of Foreign Literature* and the *Pantheon of Russian Literature*, two collections of masterpieces. In 1803, after publishing various periodicals, he was appointed historiographer, with a salary of 2000 rubles per year, and all archives were placed at his disposal. He then busied himself with his *History of Russia*. The first eight volumes appeared in 1818, and the whole edition of 3000 was sold out in 25 days. The four later volumes (the last, unfinished, comes down to 1811) were published in 1818-29. Its chief thesis was that Russia flourished when autocracy prevailed and was weak when autocratic power was on the decline. The importance of this work lies in the notes copied from documents now lost and in its artistic presentation of the subject matter. Karamzin's chief service in Russian literature is his untiring and successful labors to establish a literary language on the basis of colloquial usage, thus freeing it from the Latinisms and Germanisms introduced by the poet Lomonosov (q.v.) and from Old Church Slavonic influence. As a historian, he was merely a popularizer who presented in good literary form the conclusions warranted by the researches of others.

The best (5th) edition of Karamzin's works is that of 1845. In French appeared *Histoire de l'empire russe* (11 vols, 1819-26), *Lettres d'un voyageur russe* (1867), *Voyage en France* (1885), and others; while his Russian history was also translated into German, Italian, and other languages. Consult an excellent study of Karamzin by Y. K. Grot, in his *Works*, vol. iii (St. Petersburg, 1866), and S. I. Ponomarev, "Material for a Bibliography of the Writings of Nikolai Mikhailovitch Karamzin," in St. Petersburg Academy of Sciences, *Sbornik*, vol. xxvii (St. Petersburg, 1883), both in Russian.

KARANKAWA, ká'rán-ká'wá. An extinct tribe of Indians formerly occupying the vicinity of Matagorda Bay on the coast of Texas. From the few remains of their language they appear to have constituted a distinct stock. They are first definitely mentioned by the French explorer Joutel, in 1687. Shortly afterward, in consequence of the seizure of some of their canoes by the French, they attacked Fort St. Louis and killed or carried off every person of the small garrison. At this time they are said to have been cannibals. The greater portion remained uncompromisingly hostile to all white men as well as to most of the surrounding tribes, with the result that their number rapidly dwindled. In 1805 they were still estimated at 500 men. In 1818, 300 Karankawa warriors attacked and fought a pitched battle with 200 of Lafitte's pirates and were only repelled with the aid of artillery. Before the close of the Texan War of Independence they had been nearly wiped out by the American settlers.

About the year 1843 the small remnant, some 50 in number, removed to Mexico, whence they were expelled a few years later on account of

continued depredations, making their camp near Hidalgo, Tex., where the last of them were exterminated by Mexican ranchers in 1858.

The Karankawa appear to have been utter and irredeemable savages, but withal possessing a rare courage and magnificent physique. The men wore only a breechcloth, the women a deer-skin skirt, and both sexes tattooed the face. Their houses were mere shelters of poles, over which skins were fastened on the windward side. They subsisted on game, wild fruits, and fish. They made some pottery and had a festival at which they drank the "black drink" from the yaupon while dancing to the sound of flute, rattle, and notched stick. Consult A. S. Gatschet, "The Karankawa Indians," in Peabody Museum of Archaeology and Ethnology, *Papers*, vol. ii (Cambridge, 1901).

KARA (ká'ra) **SEA**. The portion of the Arctic Ocean inclosed between the island of Nova Zembla and the Russo-Siberian mainland. It is roughly oval in shape, about 1000 miles long and 400 miles broad, and opens into the main ocean in the northeast (Map Arctic Region, G 2). It communicates with the ocean in the west by the narrow Matochlin Strait and in the southwest by the Yugor and Kara straits on either side of Vaigach Island. Shallow in the northeast, it reaches a depth of 600 feet near and in the Kara Strait, where navigation is hindered by ice and fogs. The principal inlet to the sea are Kara Bay and the Gulf of Obi, which inclose the Yalmal Peninsula. It was known to the Russians from very early days and was first visited by ships from west Europe in 1580, when Pet and Jackman pushed through Kara Strait. In recent years Russia has endeavored, by surveys of Kara Sea and study of its ice conditions, to use it as a reliable sea route from Europe to the great Siberian rivers. The pioneer work for this purpose was done by Captain Wiggins. Consult Henry Johnson, *Life and Voyages of Joseph Wiggins* (New York, 1907).

KARASU-BAZAR, ká-rá'soo-bá-zár'. A town in the Crimea, Russia, situated 28 miles east-northeast of Simferopol (Map Russia, D 6). It has narrow and crooked streets and with its numerous khans and minarets presents a decidedly Oriental appearance. In the vicinity are situated many gardens, and the town is one of the principal centres of the fruit trade in the Crimea; tallow, wool, and hides are also considerable articles of trade. Pop, 1897, 12,961; 1912, 13,526, consisting mainly of Tatars, Armenians, Greeks, and Karaite Jews.

KARATCHEV, ká-rá-ché'. The capital of a district in the Government of Orel, Russia, situated about 56 miles west-northwest of Orel (Map: Russia, E 4). It contains a number of oil presses and carries on a trade in grain, hemp, and oil. It dates from 1146. Pop., 1912, 21,300.

KARATEGIN, ká-rá-tá-gén'. A mountain district in Central Asia, forming the northeast Province of Bokhara (Map: Asia, Central, O 3). It stretches with an area of 4100 square miles along the south slope of the Hissar and Alai, the southwest extension of the Tian-Shan Mountains, and along the valley of the Waksh or Kizil-su River, an affluent of the Amu Darva. The mountains here rise to a height of 18,000 feet, and the climate is continental, warm in summer and severe in winter. The slopes and valleys are best suited for cattle raising, but agriculture is also carried on. Wheat, corn,

hemp, and cotton, melons, and other fruits are produced. The inhabitants number about 100,000, chiefly Tajiks in the settlements, with a number of nomad Kirghiz in the country. The capital is Harm, or Garm, on the Kizil-su. Karategin was an independent khanate until 1877, when it was incorporated with Bokhara, which is under the suzerainty of Russia.

KARATHEODORI, ka'ra'tá'ô-dô'rê', ALEXANDER, PASHA (1833-1906). A Turkish statesman. He was born at Constantinople and was the son of a physician and philologist, Stephen Karatheodori. After studying in Paris, he entered the diplomatic service of Turkey. In 1876 and 1877 he was employed as counselor by Safvet Pasha, Minister of Foreign Affairs. In 1878 he took part in the preliminary negotiations over the Treaty of San Stefano, and in the same year he was sent as one of the commissioners of the Porte to the Congress of Berlin. On his return (November, 1878) he was appointed Governor-General of Crete, and in December he became Minister of Foreign Affairs, the first Christian to fill that post. He resigned in 1879, was nominated Prince of Samos 1885-95, and in 1895-96 was Governor-General of Crete, but had to resign because of the uprising which began in the latter year. See CRETE.

KARAULI, ka-rou'lâ. A native state of India. See KERAULI.

KARAVELOFF, kâ'ra-vâ'lôf, PETKO (1840-1903). A Bulgarian statesman, born at Kaloferr. He was educated at Moscow, where he taught for several years. Soon after his return to Bulgaria (1878), he was appointed Vice Governor of Vidin. He took a prominent part in politics at the head of the Liberals, and in 1880 became Minister of Finance and at the close of the year head of the cabinet. When the constitution, framed in 1879 by a national assembly of which he was vice president, was overthrown by the coup d'état of 1881, he left Bulgaria and did not return until 1883. He was again Premier (1884-86) and on the forcible abdication of Alexander was appointed member of the regency. He was in favor of a union with Rumania. On the accession of Ferdinand (1887), his power waned, and in July, 1892, he was sentenced to five years' imprisonment for conspiracy, but he was pardoned three years afterward and was elected to the National Assembly (Sobranje). Once more he became Premier in 1901, but, forced out in 1902 by an attack on his financial policy, then retired.

KARAWALA, kâ'ra-wâ'lâ, or **CARAWILA** (East Indian name). A viperine snake of southwestern India and Ceylon (*Hypnale nepa* or *Ankistrodon hypnale*), closely allied to the American copperhead. It is of small size, rarely exceeding 20 inches in length, and has the extremity of the upturned muzzle covered with scales. The poison acts slowly and yields to remedies quickly applied. See VIPER, and Plate of FOREIGN VENOMOUS SERPENTS with SNAKE.

KARCZAG, kâr'tsâg. A town of the County of Jozs-Nagy kun Szolnok Hungary, 35 miles southwest of Debreczin, on the Szolnok-Grosswardein State Railroad (Map. Austria-Hungary, G 3). It is the seat of a judicial district, with much farming and truck raising. In the neighboring swamps large quantities of tortoises are caught, the shells of which are used in domestic manufacture. Pop. 1900, 20,896; 1910, 22,996, mostly Reformed Magyars.

KARELIANS. A Finnish tribe of east Fin-

land proper and Russia, chiefly in the provinces of Olonetz, Archangel, and Tver; height 1.680 meters in Finland and 1.642 meters in Russia. They are brachycephalic, of good figure, and have regular features, with light curly hair and blue eyes. At present they number upward of 1,000,000. The Karelians represent the most advanced type of Finns, being warlike, active, thrifty, and honest. They are farmers, but the country is sterile, and famines are frequent. The national epic of Finland, called Kalevala, is a collection of Karelian folk songs. Poetry and music are cultivated, and the poetical language is smooth, with a copious vocabulary. See FINNISH LANGUAGE AND LITERATURE.

KARÉNINA, ANNA. See ANNA KARÉNINA.

KARENS, kâ'rénz. A people related by physical characteristics, as well as by language, to the Burmese, but of a more primitive type. They inhabit the mountainous regions of Arakan, Pegu, and Tenasserim and large districts in Upper Burma, numbering altogether more than 1,000,000, of whom about a quarter are said to be Christians (the result of American missions). Their earlier habitat is said to have been Yunnan, whence they followed the Mons into Burma. The Karens are capable of considerable civilization and possess many estimable qualities. The heathen Karens are nature worshippers. Where not influenced by the Burmese, etc., the Karens seem to have been monothéists. There is increasing literature in Karen since the reduction of the language of the Christian communities to writing by the missionaries. In 1847-50 Wade published in Karen a four-volume *Thesaurus of Karen Knowledge, comprising Legends, Traditions, Customs, Superstitions, Demonology, etc.* Besides Mason, *Civilizing Mountain Men* (London, 1862), and other early works, may be mentioned Macmahon, *Karens of the Golden Chersonese* (London, 1876), Colquhoun, *Among the Shans* (ib., 1885), Smeaton, *The Loyal Karens of Burma* (ib., 1887). See INDO-CHINESE.

KARIKAL, kâ'rê'kâl'. A province of French India, on the Coromandel coast, on the estuary of one of the branches of the Kaveri, within the limits of the British District of Tanjore, Madras (Map. India, D 7). Area, 52 square miles. Karikal, the chief town, is 150 miles south of Madras, is well built, and carries on a considerable export and import trade with Ceylon and Europe. It has a poorly protected harbor. Pop. (town), 1912, 19,505. The colony was ceded to the French by the Rajah of Tanjore in 1749. It subsequently fallen into the hands of the British, it was restored at the general peace of 1814, on condition that it should not contain a fortification nor have a garrison, unless for purposes of police. It is situated at Pondicherry, the capital of French India. Pop. (of possession), 1901, 56,595, 1912, 60,872.

KARIMATA, kâ'rê-mâ'tâ. See CARIMATA.

KARL, TOM (1846-1916). An American operatic tenor. He was born at Dublin, Ireland, studied singing in England under Henry Phillips and in Italy under Santuz and Trivulzi, made his début at Milan, and for many years sang in Italian opera. In 1871 he came to America with Parepa-Rosa for a season in English opera. In 1887, with William H. MacDonald and Henry Clay Barnabee, he formed a light-opera company known as the Bostonians, which for many years was famous throughout the United States, especially for its Gilbert and

Sullivan productions. It was in DeKoven's *Robin Hood*, however, that Karl was at his best. In this piece George B. Frothingham, one of the original members of the Bostonians, had sung the part of Friar Tuck 5601 times before his death in 1915. Karl retired from the operatic stage in 1896, but continued to sing in concert and gave vocal instruction. For a time after 1899 he was director of the Operatic School connected with the Academy of Dramatic Arts at Carnegie Hall, New York. Later he settled and taught in Rochester, where he also directed amateur light-opera productions.

KARLI, kar'lë. A renowned Buddhist rock temple, the largest and, perhaps, the finest in India, at the village of the same name, 25 miles southeast of Bombay, on the road to Poona. The entrance is in a perpendicular wall of rock 850 feet in height at an elevation of about 2400 feet above sea level. Before the vestibule stands a great column surmounted by four lions. The broad entrance leads to a hall 126 feet long, 45½ feet broad, and 46 feet high, with a semi-circular roof. The chamber is divided by two rows of 16 columns into a nave and two side aisles. A *dagoba*, or shrine, stands out at the end of the nave. The capitals of the columns are richly decorated and have the shape of an inverted bell surmounted by two elephants, each supporting two figures. Smaller caves at the sides were probably the dwelling places of monks or hermits.

KARLINGS. A dynasty of Frankish kings. See CAROLINGIANS.

KARLMANN. See CARLOMAN.

KARLOWICZ, kär'lô-vich, MIEZYSLAV (1876-1909). A talented Polish composer, born at Wiszniewo (Lithuania). From 1890 to 1895 he studied with private teachers in Warsaw and from 1895 to 1900 with H. Urban in Berlin (composition). In 1894 he became director of the Music Society of Warsaw, but resigned after two years, settling in Zakopane (Galicia) and devoting his entire time to composition. Through his early death—he was buried under an avalanche—Poland lost a composer of more than ordinary talent. Indeed, he must be ranked as one of the most conspicuous figures in the history of Polish music. He wrote a symphony in E minor, the symphonic poems *Returning Waves*, *Three Old, Old Songs* (a symphonic trilogy), *Stanislaw and Anna of Oswiecim*, *Sad News*, a Lithuanian rhapsody; a concerto for violin; a serenade for string orchestra; a sonata and a prelude and double fugue for piano. He also published a number of newly discovered letters of, and documents relating to, Chopin (in Polish and French).

KARLOWITZ, kär'lô-vits (Hung. *Karlócaza*, Croat, *Karlovec*). A town of the County of Syrmien, Croatia-Slavonia, Hungary, on the right bank of the Danube, 8 miles south-southeast from Peterwardein (Map: Hungary, F 4). It is the seat of an archbishop of the Greek Oriental church and has a Greek cathedral, the Archbishop's palace, a Roman Catholic church, a theological seminary, a higher Gymnasium, and a lyceum. It is the convention place of the Servian congress of churches. Its red wine and plum brandy are well known and it has fisheries and raises many swine. Its historical fame is due to the treaty concluded here with the Sultan in 1699, by which Austria was awarded the territory between the Danube and the Theiss, as well as Transylvania. Russia came into the pos-

session of the Sea of Azov region, Poland regained Kamenetz, and Venice obtained the Morea and a part of Dalmatia. Pop., 1900, 5643; 1910, 6342, mostly Croats and Serbs.

KARLSBAD, kärls'bät, or **CARLSBAD**. One of the most celebrated watering places of Europe, situated in the northwestern part of Bohemia, on both banks of the Tepl, at its junction with the Eger. It is 1165 feet above the sea and 116 miles by rail west-northwest of Prague (Map: Austria, C 1). It lies in a narrow valley, inclosed by wooded heights. It is a picturesque, well-laid-out town, with a number of fine streets, a magnificent park, a splendid French Renaissance Kurhaus, two theatres, churches of different denominations, and several elegant cafés. The town has good schools, a museum, and monuments to Goethe and Schiller. The Sprudel colonnade is a striking iron and glass structure, while the Mühlbrunnen colonnade, with its 103 monolithic columns, is a fine example of the classical style. The mineral springs for which Karlsbad is famous are 19 in number and range in temperature from 165° F. to 47° F. The oldest and best known is the Sprudel (165°), located on the right bank of the Tepl. The waters of Karlsbad are clear, odorless, radioactive, and salty and are chiefly used for drinking purposes, but there are some bathing establishments, including mud baths. The chief ingredients are sulphate of soda, carbonate of soda, and common salt; the waters are efficacious in cases of dyspepsia, rheumatism, gout, etc., and are exported extensively. The springs issue from a hard rock and form a kind of crust known as Sprudelstein or Sprudelschale, which serves for the manufacture of various useful articles and ornaments. The salt obtained from the water is shipped in very large quantities, as are also Sprudel soap and Sprudel pastilles. About 2,500,000 bottles of mineral water and 80 tons of Sprudel salts are exported annually. Karlsbad is essentially a fashionable resort. It is visited annually by over 68,000 guests. There are manufactures of porcelain and glass ware, liquors, needlework, and various products associated with agriculture. Pop., 1900, 14,640; 1910, 17,446.

Local legend ascribes the discovery of the hot springs of Karlsbad to Charles IV in 1347, but their curative properties were known long before. The waters healed the wounds he had received at Crécy, and he built a hunting seat here, bestowing many privileges upon the town. The waters of Karlsbad were used only for bathing until about 1520. The first Kurhaus was built in 1711. In 1707 the town was raised to the rank of a free royal city. In 1819 a conference arranged by the German states was held at Karlsbad, resulting in the issue of the Karlsbad Decrees (q.v.).

Bibliography. Fleckles, *Der Karlsbader Kurort* (2d ed., Karlsbad, 1880); Cartellieri, *Karlsbad als Kurort* (ib., 1888); id., *Karlsbad, die Stadt und ihre Umgebung* (ib., 1888); Friedenthal, *Der Kurort Karlsbad topographisch und medizinisch* (Vienna, 1895); Oswald, *Karlsbad und Umgebungen* (12th ed., Berlin, 1896); Schée, *Karlsbad als Terrainkurort* (Karlsbad, 1900); Ludwig Sipocz, *Karlsbad: Its Springs and Spring-Products* (7th ed., ib., 1904); F. R. von Gentl, *Guide to Karlsbad*, translated from the German by H. S. Lanoridge (Vienna, 1909).

KARLSBURG, kärls'burk (Hung. *Gyulafehérvár*). A royal free city of the County of

Unter Weissenburg, Transylvania, Hungary, on the right bank of the Maros, 50 miles south of Klausenburg, in an agricultural and stock-raising country (Map: Hungary, H 3). There is a fine Gothic cathedral dating from 1443, an archaeological museum, an episcopal palace, a seminary, and an episcopal Gymnasium. The district is noted for excellent wines. Karlsruhe is near the site of the ancient Apulum. Pop., 1900, 11,507; 1910, 11,616, nearly all Magyars and Rumans.

KARLSHAMN, kårls'håm. A seaport of the Län of Blekinge, Sweden, on the Baltic, 30 miles west of Karlskrona (Map: Sweden, E 8). It has extensive docks, a nautical school, large distilleries and manufactures of tobacco and leather, and is an export centre for granite, lumber, charcoal, and fish. It was founded in 1664. Pop., 1901, 7100; 1911, 7209.

KARLSKRONA, kårls-krö'nå, or **CARLS-CRONA**. The naval headquarters of Sweden, and capital of the Län of Blekinge, situated near the five small islands in the Baltic, 238 miles south-southwest of Stockholm (Map: Sweden, E 8). Its streets, although in many places steep, are wide and straight, it has several parks and promenades, fine granite docks, and a large, deep harbor. Among its educational institutions are a high school, a deaf-mute institute, and a nautical college with a fine building after the Florentine Renaissance. The manufactories consist of anchor works, tobacco, cloth, hat, and match factories, and the trade of the city is large. The harbor is provided with arsenals and shipyards; the navy yard is one of the largest and best in Europe and is defended by strong fortifications. The town imports textile fabrics, oil, tobacco, sugar, food-stuffs, and coal, and exports various sorts of lumber, also fish, whortleberries, paving stones, pig iron, and sheet iron. The water supply is drawn four miles through an aqueduct from the mainland. Pop., 1901, 23,955; 1911, 27,434. Karlskrona was founded by Charles XI in 1680.

KARLSRUHE, kårls'róo'e. The capital of the Grand Duchy of Baden, Germany, situated 5 miles east of the Rhine and 39 miles by rail north-northwest of Stuttgart (Map: Germany, C 4). The older part of the city is laid out in the form of an open fan, the streets radiating from the palace as a centre. The streets are wide and well paved and adorned with many excellent monuments. The principal square is the Schlossplatz, with six fountains and Schwanthaler's statue of Grand Duke Karl Friedrich. The finest street is the Kaiserstrasse, 72 feet wide and about 1½ miles long. Karlsruhe has played a distinct and important rôle in the evolution of modern German architecture. The city has six Evangelical and four Roman Catholic churches, an Old Catholic church, and two synagogues. Of the religious buildings, the most interesting are the Evangelical town church (1817), containing the ducal tombs; the Roman Catholic town church (1808), built in the style of the Pantheon; the Early Gothic Roman Catholic Liebfrauenkirche (1891); the Evangelical Christuskirche (1900); and the Roman Catholic Bernharduskirche (1901). The palace (1751-76) is in the French Mansard style and has an octagonal tower 145 feet high. The eastern wing contains the Zähringen Museum and the ducal stables. At the western end, and connected with the palace by an arcade, is the Court Theatre, built in Romanesque style in 1851-53.

The new palace of the Crown Prince is conspicuous. The educational institutions of Karlsruhe are comprehensive and excellent. They include in part a technical high school, school of forestry (the oldest institution of its kind in Germany), a Gymnasium, three seminaries for teachers, an engineering school, a school of architecture, a conservatory of music, and an art school with a museum. The Karlsruhe School of Art was founded in 1853 and has been influential in Germany. The Hall of Art contains an extensive and interesting collection of modern paintings, engravings, and frescoes. The United Grand Ducal Collections comprise, besides their historic library of 190,000 volumes, ethnological, zoological, geological, mineralogical, and antiquarian specimens. Karlsruhe is the seat of numerous scientific, artistic, and industrial organizations, benevolent institutions, and the higher administrative institutions of the grand duchy, and is the residence of the Grand Duke.

The manufacturing industries have attained considerable importance since the Franco-German War. Karlsruhe manufactures locomotives, machinery, wagons, siphons, stoneware, plated goods, paper, stoves, arms, etc. The large trade of the town is facilitated by a canal system. Pop., 1871, 36,582; 1880, 49,301; 1890 (with Muhlburg, annexed in 1886), 73,684; 1900, 97,185 (of whom, 50,630 Evangelical, 43,063 Roman Catholic, and 2576 Jewish); 1910, 134,313. The rapid increase is due to the growth of trade and manufactures. Karlsruhe is the result of princely ill humor. Margrave Karl Wilhelm, displeased with his residence at Durlach, built a hunting seat in the Hardtwald in 1715, where the palace of Karlsruhe now stands. After a few years it became the residence town. In 1848 and 1849 the town took a prominent part in the revolutionary movements in the grand duchy. Consult Weech, *Karlsruhe, Geschichte der Stadt und ihrer Verwaltung* (3 vols., Karlsruhe, 1893-1901).

KARLSTAD, kår'l'ståd, or **CARLSTAD** (Swed., city of Charles). An episcopal city, capital of the Swedish Län of Vermland, situated on the island of Tingvalla, at the north end of Lake Venern, 164 miles west of Stockholm (Map: Sweden, E 7). The surrounding country is called the Swedish Switzerland. It is connected with the mainland by two large bridges, is well built, has a teachers' seminary, a cathedral, and manufactures iron, machinery, tobacco, and matches, and also exports wooden ware and iron. Pop., 1903, 13,579; 1911, 17,192. The city was founded in 1584 and rebuilt after the fire of 1865. A conference between Sweden and Norway was held here in 1905 to decide on the discontinuance of the union between these countries.

KARLSTADT. A German reformer. See CARLSTADT.

KARLSTADT, or **CARLSTADT** (Hung. *Károlyváros*). A royal free city with municipal rights in the County of Agram, Croatia, and Slavonia, Hungary, 32 miles southwest of Agram, at the junction of the Kulpa and three small rivers (Map: Hungary, D 4). Karlstadt is strongly fortified and has an old castle, a Franciscan monastery, a large armory, and is the seat of a Greek Oriental bishop. It also has a higher Gymnasium and a military school and has a distillery and a turbine rolling mill. Pop. (district), 1900, 14,941; 1910, 16,112.

KARL THEODOR, tã'ô-dôr (1839-1909). A Bavarian Duke and ophthalmologist, born at Possenhofen. He attained the rank of general in the Bavarian army, but later turned to medicine and graduated M.D. at the University of Munich. By a special decree of the German Imperial Chancery he was permitted to practice medicine and, specializing in diseases of the eye, became one of the most famous of European ophthalmologists and was author of several treatises. One of his sisters was the Empress of Austria, wife of Francis Joseph. He was married first to Princess Sophie of Saxony and after her death to Princess Maria Josefa of Braganza.

KARLUK, kâr'lyk'. See KODIAK.

KARMA, kâr'mâ (Skt. *karman*, deed, act, from *kar*, to do). Designation of the Hindu doctrine of moral retribution and reward accomplished through a series of rebirths. All states and conditions in this life are the direct consequence of actions done in a previous existence; every deed or action (*karman*) done in the present life determines our fate in the reincarnation that is to follow. Human life is but the working out of *karman*; upon this all depends. This was in early times the doctrine of the Brahmins and of the Buddhists, and it has remained a typical feature and characteristic trait in the faith and philosophic thought of India.

Bibliography. Hopkins, *Religions of India* (Boston, 1895); Warren, *Buddhism in Translations* (Cambridge, Mass., 1896); Rhys Davids, *Buddhism. Its History and Literature* (New York, 1896); Max Müller, *Six Systems of Indian Philosophy* (ib., 1899); Johnston, *Karma* (ib., 1900); Hopkins, "Modifications of the Karma Doctrine," in the *Journal of the Royal Asiatic Society* (London, 1906-07). See METEMPSYCHOSIS.

KARMARSCH, kâr'mârsh, **KARL** (1803-79). A German technologist, born in Vienna. He studied at the Polytechnic Institute of his native city and in 1821 became an assistant there. In 1830 he was called to Hanover to establish and direct a polytechnic school which was opened the next year. He retired in 1875. Among his publications are *Handbuch der mechanischen Technologie* (6th ed., ed. by Fischer and Müller, 1887-97), and, in collaboration with Heeren, the *Technisches Wörterbuch* (3d ed., ed. by Kick and Gintl, 11 vols., 1874-92).

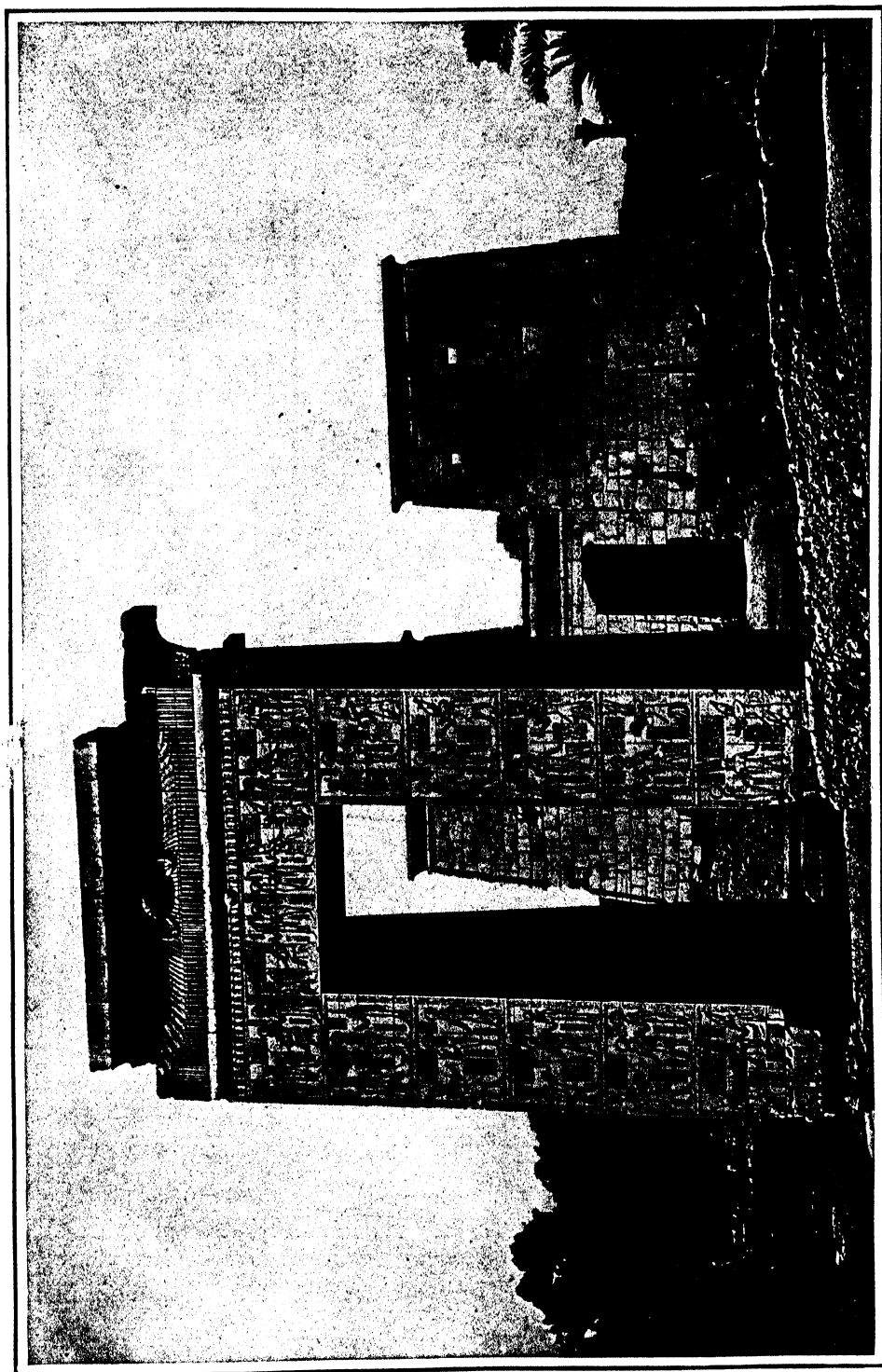
KARMATHIANS. See MOHAMMEDAN SECTS.

KARMÖ, kâr'më, or **CARMÖ**. A low-lying island of Norway, situated at the entrance to the Bukn fjord, in the North Sea, 16 miles north-northeast of Stavanger (Map Norway, C 7). It is separated from the mainland by a narrow strait, has a length of 21 miles, a breadth of 5, and an area of 68 square miles. It is sparsely inhabited. The largest settlements are Skudeneshavn and Kopervik, with populations of 1204 and 1447 respectively, the inhabitants of which are engaged chiefly in fishing for herring. The population of the island in 1910 was 11,996.

KARNAK, kâr'nâk. A village of Upper Egypt, on the east bank of the Nile, in about lat. 25° 50' N. It is situated on the northern half of the site of ancient Thebes, and close to it lie the ruins of a group of temples which, with their walled inclosures and the avenues of sphinxes connecting them, extend over a space of nearly a mile. The most important of these

temples, that of the god Ammon of Thebes, was founded in the early part of the twelfth dynasty, probably upon the site of an older structure. The original Sanctuary was erected by Useratesen I. After him other rulers—Thothmes I, Seti I, Thothmes III, Amenhotep III, Ramses I, II, and III—added to the building. After the expulsion of the Hyksos (q.v.), when Thebes became the capital of Egypt, Ammon became the chief god of the land, and his ancient temple acquired the dignity of a great national sanctuary. The Pharaohs of the eighteenth and nineteenth dynasties lavished vast wealth upon it, enlarging it and adorning it with sculptures and paintings. Under Ramses II it was practically completed, though additions were made to it by many subsequent monarchs down to the time of the Ptolemies. It stood within a walled inclosure, measuring about 1500 feet in either direction, which also contained several smaller temples and a sacred lake. An avenue of ram-headed sphinxes led from a landing place on the river bank to the main entrance, a huge pylon (370 feet in breadth and 142 feet in height) built in the time of the Ptolemies. A gateway between the massive towers of this pylon gives access to the great court, which measures 276 feet in length and 338 feet in breadth. Within the court colonnades run along the walls on either side, and in the centre, in a line with the entrance, stood 12 colossal columns arranged in two rows, erected by the Bubastid kings of the twenty-second dynasty. Six of these columns are still in a good state of preservation. In the left-hand corner of the court, near the entrance, are the ruins of a small temple built by Seti II, while to the right a temple built by Ramses III pierces the wall of the court near its upper end and extends for some distance outside. A second pylon gate, the work of Ramses I, forms an entrance from the court into the great hypostyle hall, built by Seti I and his son, Ramses II. (For illustration, see ARCHITECTURE.) This great hall, one of the grandest works of Egyptian architecture, is 171 feet in depth by 338 feet in breadth, and its roof was supported by 134 columns arranged in 16 rows, the two central rows being considerably higher than the rest. The roof of the nave or central portion of the hall was supported by the two central rows of columns and by square pillars resting upon the adjoining rows of columns on either side, the spaces between the square pillars being left open for the admission of light and air—the earliest example of a clearstory. The height of the nave from floor to roof was about 78 feet, while that of the lateral portions measured some 46 feet. Both columns and walls are richly decorated with reliefs and inscriptions, many of which still retain the brilliant colors with which they were painted. The reliefs on the outer surface of the walls represent the victories of Seti I and Ramses II in their Syrian and Libyan campaigns. Of special interest are the representations of the siege of Kadesh on the Orontes by Ramses II, and the inscriptions containing the treaty of peace concluded by the same monarch with the Hittites, and the so-called Epic of Pentaur celebrating the prowess of the King at the battle of Kadesh. The text of the former inscription, with a translation and commentary, was published by Prof. W. M. Müller, in *Mittheilungen der Vorderasiatischen Gesellschaft*, vol. vii, part v (Berlin, 1902). From the upper end of the hypostyle hall a pylon gate, built by Amenophis

KARNAK



PORTAL OF EUERGETES I AND ENTRANCE TO THE TEMPLE OF CHONS BUILT BY RAMESES III

III and now in ruins, leads to an open court, in the centre of which is an obelisk (76 feet high) erected by Thothmes I. Near it lie the fragments of a companion obelisk erected to the same monarch. Beyond the obelisks are the ruins of a pylon erected by Thothmes I, and beyond this the remains of a court adorned with columns and with colossal statues of Osiris. In the centre of this court are two great obelisks erected by Queen Hatasu. One of them has fallen; the other, which still stands erect, measures 97½ feet in height and is the tallest Egyptian obelisk in existence. (See OBELISK.) From this court a pylon gate, built by Thothmes I, gives entrance to a similar court, and thence another pylon, the work of Thothmes III, leads to a vestibule opening into the sanctuary, which is adorned with reliefs representing religious subjects and is surrounded by a number of small chambers. To the rear of the sanctuary are the scanty remains of the oldest portion of the building, the temple of the twelfth dynasty. Farther back are the hypostyle hall of Thothmes III and a number of smaller halls, corridors, and chambers. From the central court containing the obelisks of Thothmes I, a succession of courts and pylon gates leads to an entrance in the southern side of the great temple inclosure, and thence an avenue of sphinxes leads to the ruined temple of the goddess Mut and the sacred lake behind it. In the southwestern corner of the great inclosure is the temple of the Theban moon god Chons (q.v.), built by Ramses III and embellished by several of his successors. A fine pylon (60 feet high) forms the entrance, and from it an avenue of sphinxes ran in a southerly direction until it intersected a similar avenue leading from Luxor (q.v.). From the intersection another avenue ran eastward until it met the avenue leading from the temple of Ammon to that of his divine consort Mut. To the north of the inclosure surrounding the great temple of Ammon are the ruins of a temple dedicated to the Theban war god Mont (q.v.). Since 1895 much work in the way of reconstruction has been done on the great temple under the direction of the French Egyptologist Lefebvre (q.v.).

Bibliography. Sir J. G. Wilkinson, *Topography of Thebes* (London, 1835); Lepsius, *Denkmäler* (Berlin, 1849-58); A. E. Mariette, *Karnak, Etude topographique et archéologique* (Paris, 1875); Dumichen, *Geschichte des alten Aegyptens* (Berlin, 1878); Perrot and Chipiez, *History of Art in Ancient Egypt*, translated from the French by Walter Armstrong (2 vols., New York, 1885); G. C. Maspero, *Archéologie égyptienne* (Paris, 1887, Eng. trans., New York, 1902); Lefebvre, *Annales*, vol. iii (Paris, 1902); Ludwig Borchardt, "Zur Baugeschichte des Amonstempels von Karnak," in *Untersuchungen zur Geschichte und Altertumskunde Aegyptens*, vol. v (Leipzig, 1905); W. M. Müller, *Egyptological Researches* (Washington, 1906-10); Baedeker, *Egypt and the Sudan* (7th ed., Leipzig, 1914); A. E. P. Weigall, *Guide to Antiquities in Upper Egypt* (ib., 1910). See Colored Plate of ARCHITECTURE.

KÄRNTEN. See CARINTHIA.

KAROK (kă'rok) **STOCK.** A linguistic family of California Indians, sometimes known as the Quoratean stock, formerly living on the Klamath River in the northwestern part of the State. In culture they are quite like the Hupa

(q.v.) and Yurok (q.v.). Under the local name of Orleans, they now number 775.

KAROLSTADT. A German reformer. See CARLSTADT.

KÁROLY, NAGY. See NAGY-KÁROLY.

KÁROLYI, kă'rô-lyé, COUNTS. An Hungarian family whose ancestral seat, Nagy-Károly, is in the County of Szatmár. They sprang from the Kaplyon family, which flourished in the thirteenth century.—MICHAEL KÁROLYI was raised to the rank of Baron in 1609, and his grandson, ALEXANDER (1668-1743), became Count in 1712. The latter was a general under Rákóczy during his struggle against the Hapsburgs, but, being left in command of the insurgent forces by Rákóczy's retirement into Poland, made peace with the King and was later appointed a field marshal.—Count ALOYS (1825-89) became in 1866 and again in 1871 Austrian Ambassador at Berlin, was the second Austrian Plenipotentiary at the Berlin Congress (1878), and was Ambassador to England (1878-88).

KARPELES, kăr'pe-lés, GUSTAV (1848-1909). An Austrian literary critic and historian, born of Jewish stock in Eriwanowitz, Moravia. He studied at Breslau and, after journalistic activity there, in 1877 removed to Berlin, where he was associated with Spielhagen as editor of Westermann's *Monatshefte* until 1882. One of the foremost of Heine scholars, Karpeles was the author of an *Autobiographie*, collected from the poet's letters and works (1888), and of *Heine: Aus seinem Leben und aus seiner Zeit* (1899). His further writings include also *Ludwig Borne* (1870); *Nikolaus Lenau* (1873); *Friedrich Spielhagen* (1889); *Goethe in Polen* (1889); *Graf Moltke als Redner* (1890). But his more valuable work is such essays on Jewish literature as *Die Frauen in der jüdischen Literatur* (1871), and the two great histories, *Geschichte der jüdischen Literatur* (2 vols., 1886) and *Allgemeine Geschichte der Literatur* (1891; 2d ed., 1901). In English he published *Jewish Literature* (1895) and *Sketch of Jewish History* (1897).

KARPINSKI, kăr-pén'ské, FRANCISZEK (1741-1825). A Polish lyric poet. He was born at Holoskow, Galicia, received instruction from the Jesuits in Stanislawow, and studied theology and law in Lemberg. In 1783 he became secretary to Prince Adam Czartoryski and afterward attracted the attention of the King, Stanislas Augustus. Later he retired to the country. In 1794 some of his poems the King gave Karpinski two estates in 1794. The best of his works are his elegies, idyls, and songs, religious and erotic, of which many are still heard among all classes throughout Poland. His collected works were published by Dmochowski in four volumes (Warsaw, 1804; new ed., 3 vols., Cracow, 1862). His autobiography was published by Moraczewski in Lemberg (2d ed., 1849). A monument to his memory was erected in Kolomea in 1880 on the anniversary of his birth (October 4).

KARQUENAS, or KARQUINES See CARQUINEZ.

KARR, kăr, ALPHONSE (1808-90). A French novelist, journalist, and satirist. He was educated at the Collège Bourbon and subsequently became a teacher there. He became a contributor to the *Figaro* and won his first success in an autobiographical romance, *Sous les tilleuls* (1832). This vein was continued with *Une*

Teheran, about 120 miles south of the latter (Map: Persia, D 6). Surrounded on three sides by mountains, it contains a great number of mosques, baths, caravanserais, and a college, and is famous for its melons and figs. Its chief manufactured products are silk and woolen goods, jewelry, rose water, copper utensils, brasswork, and faience. Cobalt is mined in the vicinity. Pop. (est.), 35,000. It suffered greatly from an earthquake in 1895.

KASHER. See KOSHER.

KASHGAR, kăsh'gâr'. The former capital of the Chinese Dependency of East Turkestan, situated on the river Kashgar, in lat. 39° 27' N. and long. 76° 2' E, about 100 miles northwest of Yarkand (Map. Asia, J 5). It consists of the old town, lying on an elevation overlooking the river, and the new town, lying about 2½ miles south of the former. They are both surrounded by mud walls and moats, and the new town is also defended by a citadel. With the exception of the Chinese quarter in the new town, dating from 1838, and more or less modern in appearance, Kashgar is poorly built and consists largely of mud huts. It contains a large number of native schools and manufactures gold, jasper, and silver articles, cotton and woolen goods, and carpets. The rivalry of Yarkand has had a detrimental effect on the commerce of Kashgar. The chief articles of commerce are textiles. The civil government of the region is in charge of a Chinese official, with the rank of Taotai, who resides in the old town. The general and his troops live in the new town. A Russian consulate is maintained here. The population, estimated at 60,000 to 70,000, is very heterogeneous. Kashgar is a city of great antiquity and is supposed to have been mentioned as early as 76 B.C. as a place of commercial importance. It is situated at the junction of roads to Peking, India, and the Russian Empire. It was ruled successively by its own princes, the Mongols, and the Chinese. During the Dungan revolt of the Chinese Mohammedans, Kashgar, following the example of the other cities of East Turkestan, rose against its Chinese rulers and became in 1865 the capital of the state organized by Yakub Beg. The town was regained by the Chinese in 1877. Consult: Lansdell, *Chinese Central Asia* (2 vols., New York, 1894); Sven Hedin, *Central Asia and Tibet* (2 vols., London, 1903); Sir F. E. Young-husband, *The Heart of a Continent* (New York, 1904).

KASHMIR, kăsh'mēr', or **CASHMERE**, officially **KASHMIR AND JAMMU** (jūm'oo). A native state under the direct control of the government of India, situated mostly in the Himalayan mountain system, in the extreme northern part of the Empire (Map: India, C 1). To the north is East Turkestan, while on the east the country is bounded by Tibet and on the south and southwest by the Punjab; on the west lies the North-West Frontier Province (the British District of Hazara and the native states of the Chitral and Swat). The state, having a total estimated area of 84,432 square miles, includes the provinces of Jammu (with the jagirs of Bhadarwah and Punch), Kashmir, Ladakh, Baltistan, and Gilgit. The state is traversed by the western Himalayas, running with numerous lateral ranges on either side of the valley of the upper Indus, which flows through the centre of the country. The greatest elevations are found in the north, in the Mustagh or

Karakoram Range; the Rakaposhi Mountain north of Gilgit is 25,561 feet high, and Mount Godwin-Austen, in the north of Baltistan, is 28,265 feet, being after Mount Everest the highest mountain in the world. Godwin-Austen is one of the great peaks round the Baltoro glacier; two of the others are higher than the Rakaposhi Mountain, viz., Gasherbrum (28,100 feet) and Masherbrum (25,660 feet). Near the south bank of the Indus, west of Baltistan, is the great peak Nanga Parbat (26,182 feet). The valleys of Kashmir are celebrated for their scenery, seldom falling throughout the greater part of the country to much less than 5000 feet. So mountainous is the country that by far the larger portion is uninhabited; it is probable that in not more than 14,000 square miles of the total area of 84,432 square miles is there permanent habitation; of this area, upward of 5000 square miles are in the Jammu Province and about 8000 square miles in the Kashmir Province. The climate is dry and in winter severe; at Srinagar (elevation 5204 feet) the average January temperature is 33.2° F. and at Leh (11,503 feet) 19.1° F., while the average July temperature is 74.3° F. at the former and 63.3° F. at the latter place, the average annual rainfall at Srinagar is about 27 inches and at Leh only slightly more than 3 inches. The most important part of the country is the celebrated valley of Kashmir (in Kashmir Province), surrounded by lofty mountains, which culminate some 50 miles north of the valley in Nanga Parbat. The valley is traversed by the Jhelum River (the Hydaspes of the ancient Greek historians), and its comparatively level floor, averaging 6000 feet above the sea, is about 84 miles long and 20 to 25 miles wide. Srinagar, the capital of the state, is situated about in the middle of the valley, on the Jhelum. There is little agriculture practiced outside of the Jammu Province and the valley of Kashmir, here the soil, when irrigated, yields good crops of cereals, especially rice, and fruit and vegetables. Some of the mountain slopes afford good pasturage for cattle and goats. Not much has been done towards discovering the mineral resources of the state; coal has been found in the Udhampur District of Jammu and at Sof in the south of the Kashmir Province. Manufacturing is confined largely to Srinagar, which formerly was famous for its Kashmir shawls. Silk weaving and carpet making are important. Other industries are wood carving, the manufacture of woolen cloth, and work in iron, silver, and copper. By far the largest import is piece goods; others are sugar, iron, tea, and tobacco. The largest export is ghee, others of some magnitude are hides and skins, woolen cloth, fruits, and drugs.

The Kashmiris are by language of Aryan stock. Physically they are of the white race, although in some regions much mixed with Mongolian blood, especially in the outlying territories of Ladakh, Baltistan, etc. Kashmiri is the vernacular of about 34 per cent of the population, Punjabi 30 per cent, and Dogri 15 per cent; there is a great variety of languages used in different parts of the state by comparatively small numbers. The Baltis, Ladakhis, etc., seem to be a smaller and less strongly developed race than the Kashmiris proper, who have an admixture of Sikh blood. The population of the state in 1901 was returned at 2,905,578, showing an increase of 14.2 per cent over 1891, but a

part of this increase was due to a more thorough enumeration; in 1911, 3,158,126, the increase over 1901 being 8.7 per cent. In 1911, males numbered 1,674,367 and females 1,483,759. A great majority of the inhabitants are classified as Mohammedan, but the influence of Hinduism, as well as belief in witchcraft and sorcery, is still strong among them. The 1911 census returned the Mohammedans at 2,398,320; Hindus (who are chiefly in Jammu), 690,390; Buddhists, 36,512; Sikhs, 31,553, Christians, 975. Srinagar (q.v.) had 122,618 inhabitants in 1901 and 126,344 in 1911; the town of Jammu, in 1901, 36,130. The state has suffered much from earthquake, famine, cholera, and (especially in Srinagar) fire, but in recent years the people have enjoyed a marked and increasing prosperity.

Kashmir was an independent monarchy until 1586, when it was conquered by Akbar and annexed to the Mogul Empire. It was taken by the Afghans in 1752 and annexed by the Sikhs in 1819. In 1846 the Sikh Maharaja, Gulab Singh, placed himself under British protection, in return for which he was confirmed in the possession of the country. Gulab Singh made several extensions of territory, which practically surrounded the Kashmir of 1846. He died in 1857 and was succeeded by his son Ranbir Singh, who died in 1885. Under Partab Singh (born 1850) several important changes were inaugurated in 1889. The old land system was swept away and restrictive monopolies abolished. A period of prosperity and national regeneration was immediately entered upon, and since then progress has been continually made. There is a British political agent at Srinagar.

Kashmir has exerted considerable cultural influence upon Tibet and not a little physical influence also. Kashmiri folk literature is rich in tales and proverbs, many of which have been published in Knowles, *Dictionary of Kashmiri Proverbs and Sayings* (London, 1885), and *Folk-Tales from Kashmir* (ib., 1888). For information of value will be found: ... works: Bellew, *Kashmir and Kashgar* (London, 1875); Frederic Drew, *The Jummoo and Kashmir Districts: A Geographical Account* (ib., 1875); William Wakefield, *The Happy Valley Sketches of Kashmir and the Kashmiris* (ib., 1879); *Kings of Kashmir: being a translation of the Sanskrit work Rājalaranṅgī of Kāhlana pādita* by J. C. Dutt (Calcutta, 1879); Hellwald, *Centralasien* (2d ed., Leipzig, 1880); Oscar Eckenstein, *The Kāvakorams and Kashmir. An Account of a Journey* (ib., 1896); Duke, *Kashmir Handbook* (ib., 1903); P. Pirie, *Kashmir The Land of Streams and Solitudes* (New York, 1909); F. M. J. Bruce, *Kashmir* (ib., 1911); Sir F. E. Younghusband, *Kashmir* (London, 1911); F. A. Grierson, *Manual of the Kāshmiri Language, comprising Grammar, Phrase-Book, and Vocabulary* (2 vols., Oxford, 1911); E. F. Neve, *Beyond the Pir Panjal, Life among the Mountains and Valleys of Kashmir* (London, 1912); Arthur Neve, *Thirty Years in Kashmir* (ib., 1913).

KASHMIRI, kāsh-mě'rě. The language of the Aryan population of Kashmir, in northern India. It is descended from the Middle Indian vernaculars and is thus ultimately related to the Sanskrit, although many Arabic and Persian words have been imported into it. The language has no written literature of native

origin, but portions of the Bible have been translated into the vernacular. The script in which it is written is generally Persian; but the older Sharada alphabet, derived from the Devanagari, is sometimes used, especially by the Hindu Kashmiris. For further information, consult: Elmelle, *Kashmiri-English and English-Kashmiri Vocabulary* (London, 1872); Wade, *Grammar of the Kashmiri Language* (ib., 1888); Grierson, *Manual of the Kāshmiri Language* (Oxford, 1911).

KASHOWOO. See MARIPOSAN STOCK.

KASHU, ká-shōō'. A province of Japan. See KAGA.

KASIKUMUKS, ká'sé-kōō-mōōks'. One of the Lesghian peoples of central Daghestan in the eastern Caucasus. They are not to be confounded with the Kumyks, or Kумыks, to the north of them, who are, linguistically at least, of Turkish stock. The Kasikumuks call themselves Lak; the Avars term them Tumul. Their language has been studied by Von Uslar and Schiefner. An account of the Kasikumuks will be found in Erckert, *Der Kaukasus und seine Völker* (Leipzig, 1887).

KASKASKIA, kās-kās'ki-ā. An Algonquian tribe of the Illinois confederacy, formerly living upon the river of the same name in southern Illinois. Although of considerable importance at the first occupation of the country, they decreased so rapidly that before the organization of the Territory they had been reduced to a mere handful. In 1832 the survivors, with the Peoria, removed to Kansas, where in 1854 both tribes were confederated with the Wea and Piankishaw from Indiana. In 1867 all four tribes removed to the Quapaw Agency, Oklahoma. The name is said to signify 'a katydid.'

KASKASKIA. A river of Illinois, rising in the centre of Champaign County (Map Illinois, E 9). It flows in a generally southwesterly direction and empties into the Mississippi River, near Chester. Length, about 400 miles, drainage area, about 5840 square miles. It is navigable to Vandalia, about 90 miles.

KASKASKIA. A village in Randolph Co., Ill., on the Mississippi River. Pop., 1910, 142 (Map: Illinois, B 6). In 1673 Joliet visited the Kaskaskia Indians, then living near the site of what is now Utica, Ill., and in 1675 Marquette established a mission among them. In 1700 both mission and village were moved to the site of the present Kaskaskia. It is accordingly the oldest permanent settlement in the Mississippi valley. The English gained possession of it by treaty in 1763 and in 1772 made Kaskaskia the capital of their territory in this part of the country. On July 4, 1778, George Rogers Clark (q.v.), with 200 backwoodsmen, captured it for Virginia—an event which had much to do with the cession of the western territory to the United States in 1783. For many years Kaskaskia was the most important settlement in the "Illinois Country," and after the organization of Illinois in 1809 was the Territorial and State capital until 1820, since which time it has steadily declined. Originally it was 3 miles from the Mississippi; but the river gradually encroached and united with the Okaw in 1881. The continued widening of the channel at the north end of the island gradually ate away the land, until most of the original town site disappeared. The present village is all that remains of the original town. Consult Mason, "Kaskaskia and its Parish Records," in *Maga-*

zine of American History, vol. vi (New York, 1880), and an article, "Kaskaskia: A Vanished Capital," in the *Chautauquan*, vol. xxx (Chautauqua, N. Y., 1900).

KASNER, kas'nēr, EDWARD (1878-). An American mathematician, born in New York City. He was educated at the College of the City of New York (B.S., 1896), at Columbia University (Ph.D., 1899), and at the University of Göttingen (1900). At Columbia he was tutor in mathematics (1900-05), instructor (1905-06), adjunct professor (1906-10), and professor after 1910. He became one of the editors of the *Transactions of the American Mathematical Society*, and of the *Revue semestrielle des mathématiques*. His publications include: *The Invariant Theory of the Inversion Group* (1900); *Present Problems of Geometry* (1905); *Differential-Geometric Aspects of Dynamics* (1913).

KASR EL-KEBIR, käs'r el-kē-bēr' (Sp. *Alcazar Quivir*). A town of Morocco. See ALCAZAR.

KASSABA, kas-sā'bā. A town in Asia Minor. See CASSABA.

KASSALA, kās-sā'lā. A town of north Africa, situated 1700 feet above the sea, on the river Gash, at the southeast end of Anglo-Egyptian Sudan, near the Abyssinian frontier (Map: Africa, H 3). The soil is very fertile; white durra is the chief crop. Prior to the uprising of the Mahdi in 1883, the town belonged to Egypt. Pop. (est.), 20,000, mostly Arabs. It was almost completely ruined by the Mahdists and was taken by the Italians in 1894. In accordance with the Anglo-Italian convention it was restored to Egypt in 1897.

KASSAPA, kās'sā-pā, **KĀSYAPA**, kā'shyā-pā. See MAHĀ-KĀSYAPA.

KASSEL, kās'sel. A city of Prussia. See CASSEL.

KASSIMOV, kā-sē'mōv. Capital of a district of the same name in the Government of Riazan, Russia, situated on the left bank of the Oka (Map: Russia, F 4). It contains a number of manufacturing establishments, principally tanneries, an Orthodox cathedral, and a mosque dating from the time of Khan Kasim. There is considerable trade, especially at the July fair. In the fifteenth century it was the residence of the Tatar Khan Kasim. Pop., 1897, 13,500; 1912, 16,340.

KAS'SITES. A people whose kings for 576 years ruled over Babylonia (c 1761-1185 B.C.). In the cuneiform inscriptions they are called *Kashshu*. Delitzsch regards this name as referring to the Cossæans (*Kossaiot*) mentioned by Polybius (v, 44, 7), Strabo (xi, 13, 6; xvi, 1, 18), Diodorus (xvii, 111), and Arrian (*Anab.*, vii, 15, 1)—a warlike people living in the Zagros Mountains near the borders of Media, against whom Alexander fought; and Eduard Meyer is strongly of the same opinion. Oppert and Lehman identify the *Kashshu* with the Cissians (*κισσιῶν*), mentioned by Æschylus (*Choeph.*, 424; *Persæ*, 17), Herodotus, and others. The fact that Sennacherib found the *Kashshu* in the same region where the Cossæans were in the days of Alexander (*Annals*, i, 63-ii, 7) distinctly favors the first view. Lehmann thinks that this is only an instance of the constantly occurring extension of a territorial name; but the probability is that the Kassites are identical with the Cossæans. Whether *Gandash* (1761-45) came from the home of the Kassites in the Zagros Mountains or from some district in Babylonia occupied by this people at

the time, is uncertain. He was the first King of the dynasty. His successors—Agum I (1745-23), Kashtiliash I (1723-01), Ushi (1701-1693), Abirattash (1693-70), Tazzigurmash (1670-55), and Agum II (1655-25)—came more and more under the influence of Babylonian culture. Agum II (Agumkakrimi) styles himself King of Kashshu, Padan, Alman, and Guti. He recovered from Khana in Mesopotamia the images of Marduk and Zarpanit that had been carried away by the Hittites in 1932. In the Babylonian list of kings there is a break after Tazzigurmash. But from the summary at the bottom we know that there were 36 kings of this dynasty, reigning 576 years and 9 months. The names of at least six kings for the period from 1625-c.1500 have not yet been found. In the beginning of the fifteenth century Karaindash made a covenant (*biritu*) with Asurimnisesu of Assyria, according to an account of the relations between the two kingdoms drawn up in the reign of Adadnirari V (812-783). There may have been two reigns between Karaindash and Kadashmanharbe I, who corresponded with Amenhotep III (1411-1375). Kurigalzu I also was a contemporary of this Egyptian King. Burnaburiash (c 1381-56) married a daughter of Asuruballit I of Assyria, made a treaty with Puzur Asur, and corresponded with Amenhotep IV (1375-50) of Egypt. His son Karahardash was murdered by the Kassites, but their leader Nazibugash (1356-55) was deposed by Asuruballit II, who placed on the throne Kurigalzu II (1355-33), another son of Burnaburiash. Kurigalzu II invaded Elam and captured the city of Susa; he also defeated Adadnirari II of Assyria. This war with Assyria was continued by Nazimaruttash (1333-07), who was defeated by Adadnirari II. Kadashman Turgu (1307-1290) was followed by Kadashman Ellil (1290-84), who fought with Shalmaneser I of Assyria (c.1320-1290), probably in the last year of this King's reign. Kadashman Ellil also maintained friendly relations with the Hittite King Hattusil, the contemporary of Ramses II (1310-1244). In the reigns of Kudur Ellil (1284-76) and Shagarakti Shuriash (1276-63) Tiglath Ninib of Assyria made fierce attacks upon Babylonia which were repulsed. But Kashtiliash II (1263-55) succumbed, and seven of his regnal years are counted as belonging to Tiglath Ninib as the first Assyrian King ruling over Babylonia (c 1262-54). After his murder Ellilnadinshum (1255-54), Kadashmanharbe II (1254-53), Adadshumiddin (1253-47), and particularly Adadshumusur (1247-17) kept up the struggle which ended with victory for the Babylonians. Melishipak (1217-02) pursued Ninibpilesar to the city of Assur. Mardukapaliddin I (1192-1189) maintained his power, which, however, was now waning. The last kings were Zamamaiddin (1189-88) and Ellilnadinahi (1188-85).

As to the ethnic relations of the Kassites, little is known. Attempts have been made to prove from their language that they were Aryans or belonged to the same Asianic stock as the Mitannians and Hittites. But if *Suriash* is the Indo-Iranian sun god, he may be a foreign importation; and if Turgu is identical with Tarko, Tarchu, or Terah, this god seems to have been worshiped by many peoples not closely related. The Kassites do not appear to have been Elamites; they are clearly not Semites; and they have to all appearances no relation

to the Sumerians. There may have been an Aryan element in the population; and it is not impossible, though it cannot yet be proved, that they belonged to a great family of related nations of which the Hittites were the westernmost branch. The Hebrews probably knew them as *Kash*; and the possible pronunciation *Kush* seems to have caused a double confusion in Gen. ii 13 and x. 8. See BABYLONIA.

Bibliography. Friedrich Delitzsch, *Die Sprache der Kassiter* (Leipzig, 1884); C. P. Tiele, *Babylonisch-assyrische Geschichte* (Gotha, 1886); Julius Oppert, in *Zeitschrift für Assyriologie* (Leipzig, 1888, 1890); Eduard Lehmann, in *Zeitschrift für Assyriologie* (ib., 1892), id., *Zwei Hauptprobleme der altorientalischen Chronologie* (ib., 1898); H. Winckler, *Geschichte Babyloniens und Assyriens* (ib., 1892); id., *Alt-orientalische Forschungen* (ib., 1892-1902); H. V. Hilprecht, *Old Babylonian Inscriptions*, vol. 1 (Philadelphia, 1893); G. Husing, "Elamische Studien," in *Mitteilungen der Vorderasiatischen Gesellschaft* (Berlin, 1898); R. W. Rogers, *A History of Babylonia and Assyria* (New York, 1900); A. Schefftelowitz, in *Zeitschrift für vergleichende Sprachwissenschaft* (Berlin, 1902); A. T. Clay, *Personal Names from Cuneiform Inscriptions of the Cassite Period* (New York, 1912); R. W. Rogers, *Cuneiform Parallels to the Old Testament* (ib., 1912); Eduard Meyer, *Geschichte des Altertums* (3d ed., Stuttgart, 1913).

KASSNER, kas'nēr, CARL JULIUS H. (1864-). A German meteorologist, born in Berlin and educated there at the technical high school and the university. After being employed in the Royal Astronomical Observatory, in 1890 he became connected with the Royal Meteorological Institute in Berlin, of which he was appointed a director in 1909. He traveled widely and was well known as an authority on Bulgaria, which he visited 10 times between 1900 and 1912. Kassner did much for the teaching and popularization of meteorology, devised several meteorological instruments, and prepared two meteorological globes (1907). Among his published works are *Ueber die Entstehung der Zyklonen* (1893), *Das Wetter und sein Einfluss auf das praktische Leben* (1908), *Das Reich der Wolken und Niederschläge* (1909); *Die meteorologischen Grundlagen des Städtebaus* (1910).

KAS'SON, JOHN ADAM (1822-1910). An American legislator and diplomat, born at Charlotte, Vt. He graduated at the University of Vermont in 1842, was admitted to the bar in 1845, and practiced for several years. In 1857 he settled in Iowa, where he entered politics, and in 1860, as chairman of the Republican State Committee, managed the Lincoln campaign. Thereafter he held a large number of offices and appointments. Assistant Postmaster-General in 1861-62, he was sent as commissioner to the first International Postal Congress at Paris (1863) and in 1867 concluded postal treaties with six European nations. He served in Congress (1863-67, 1873-77, 1881-84), between these terms was a member of the Iowa Legislature and Minister to Austria, and in 1884-85 was Ambassador to Germany and American representative at the International Congo Conference at Berlin. In 1893 he was appointed special envoy to the Samoan International Conference and in 1897 commissioner plenipotentiary to negotiate reciprocity treaties

with foreign Powers under the provisions of the Dingley Act. In 1898 he was a member of the American-Canadian Joint High Commission. He published: "A History of the Monroe Doctrine," in the *North American Review* (1881); a *History of the Formation of the United States Constitution* (1889); *Evolution of the Constitution and History of the Monroe Doctrine* (1904).

KASTALSKY, kas-tal'ski, ALEXANDER DMITRIEVICH (1856-). A Russian composer. He was born at Moscow and studied music in its famous conservatory; from 1876 to 1882 with Tschaikowsky and Taneiev among his teachers. In 1887 he became instructor of the piano in the Synod School of Sacred Music and two years later assistant master of the Synod Chapel, becoming full master in 1901. One of the leading representatives of the newer, nationalist tendencies in Russian Church music, to which his own work has given considerable impetus, he wrote the chorales *The Mercy of the World* and *The Almighty God*; *Hymns for Easter Eve*; and *Songs of the Cherubim*.

KASTAMUNI, käs'ta-mōō'nē. The capital of a vilayet of the same name in Asiatic Turkey, in the northern part of Asia Minor, 36 miles from the Black Sea, 250 miles east of Constantinople (Map: Turkey in Asia, B 2). On a rocky hill outside the town stands an old castle and in the town are a large number of mosques, two Christian churches, and some industrial establishments manufacturing cotton and leather goods. There is a considerable trade in timber, cereals, fruit, and mohair. The city is a centre of Moslem learning and contains several theological colleges and a convent of dervishes. Kastamuni was once famous for its copper ware, but the ancient mines in the vicinity are now abandoned. The population is estimated at about 16,000—Turks, Greeks, and Armenians. It was a town of some importance in Byzantine times and was taken by the Ottoman Turks in 1393.

KÄSTNER, kēst'nēr, ABRAHAM GOTTHELF (1719-1800). A German mathematician and poet, born at Leipzig. He devoted himself to the study of law and afterward to philosophy, physics, and mathematics. In 1739 he began teaching mathematics, philosophy, and logic in the University of Leipzig and in 1746 was made professor. In 1756 he was called to Göttingen as professor of natural philosophy and geometry. His chief mathematical works are *Anfangsgründe der Mathematik* (4 vols., 1758-69; 6th ed., 1800); *Vorlesungen über Mathematik und Physik* (1768); *Astronomische Abhandlungen* (2 vols., 1772-74); *Anfangsgründe der Arithmetik, Geometrie, ebenen und sphärischen Trigonometrie und Perspektive* (Göttingen, 1774); *Geschichte der Mathematik* (4 vols., 1796-1800). He is best known for his *Sinngedichte* (1781), a collection of witty and caustic epigrams.

KASTNER, käst'nēr, JOHANN GEORG (1810-67). A German composer and musical theorist. He was born at Strassburg and studied under Maurer and Romer. He composed four operas—*Gustav Wasa* (1832), *Der Tod Oscars* (1833), *Der Sarazens* (1834), *Die Königin der Sarmaten* (1835)—and then went to Paris to continue his studies under Berton and Reicha. There Kastner undertook recondite researches, published treatises on instrumentation, vocalization, etc., composed operas, and became famous as a teacher. He was founder and vice president of

the Association des Artistes-musiciens, the recipient of many honors, and Officer of the Legion of Honor. Many of his textbooks were approved by the Academy and used in the Conservatory, among them his treatise on instrumentation (1837), which remained the standard till the appearance of Berlioz' monumental work some 30 years later. Perhaps his most original work was the *Livres-partitions*, a series of vocal and instrumental symphony cantatas, whose various subjects are described and analyzed in accompanying essays. In addition to the operas already mentioned he composed *Beatrice* (1839); *La maschera* (1841); the biblical opera, *Le dernier roi de Juda* (concert performance, 1844), which is considered his masterpiece, and much instrumental music. Consult F. J. Fétis, *Biographie universelle des musiciens, et bibliographie générale de la musique* (Brussels, 1837-81), and Herman Ludwig, *Johann Georg Kastner, ein elsässischer Tondichter, Theoretiker und Musikforscher* (3 vols., Leipzig, 1886).

KASTRI. See CASTRI

KASTRO, ká'strō. Capital of the island of Mytilene (q.v.) in the Aegean Sea. It is the seat of a metropolitan of the Greek church, has 14 mosques, seven churches, and a castle built in 1373 on the site of the ancient acropolis. Since the Balkan War the city has been occupied by the Greeks and has a lively trade with the neighboring islands and the mainland. The city was formerly built on an island, but it is now connected with the mainland of Mytilene, or Lesbos, by a causeway and has harbors on both sides of the island. Pop., 1896, 53,000; 1912, 56,000, mainly Moslems.

KASVIN, kaz-vén'. A town of Persia. See KASBIN.

KÁSYAPA. See MAHĀ-KÁŚYAPA.

KATABAGAN, ká-tá-bá'gán. An almost extinct group of pagan Malays who inhabit the mountains between Tayabas and Ambos Camarines provinces. They are interesting only in that they are the last remnant of a pagan people in southern Luzon. See PHILIPPINE ISLANDS.

KATABOLISM (from Gk. καταβολή, *katabolē*, a throwing down, from καταβάλλειν, *kataballein*, to throw down, from *katá*, *kata*, down + βάλλειν, *ballein*, to throw). The chemical changes that occur within an organism and result in the formation of simpler products through the decomposition of more complex ones. It is otherwise known as destructive metabolism and is identical with digestion, respiration, and fermentation. See METABOLISM

KATAHDIN, ká-tá'din, or **KTAADN** (from an Indian word meaning "highest land" or "big mountain"). The highest mountain in Maine, 5200 feet above the sea (Map: Maine, C 3). It is in Piscataquis County, somewhat north by east of the centre of the State, in a dense wilderness and difficult of access. Mount Katahdin is of granite, which is exposed in large abrupt walls on the slopes. The summit is bare and covered with lichens, and from it a grand view may be obtained of the wild and rough country around it.

KATAK. See CUTTACK.

KATAKANA, ká'tá-ká'ná. See JAPANESE LANGUAGE.

KATAKIUCHI, ká'tá-ké-ō'chē (Jap., enemy killing). A form of vendetta practiced during many centuries in Japan. It was popularly thought proper to slay an enemy who had murdered one's father or lord. Though pro-

hibited by the government, it was imperatively prescribed by custom. To fail in the duty of taking vengeance involved social ostracism, while, on the other hand, its performance brought capital punishment of the avenger. This subject is the basis of hundreds of popular stories and famous novels, the greatest of many historic illustrations of the custom being that of the "Forty-seven Ronins," which is a standard representation in the Japanese theatres. In recent years the newer school of native moralists has attacked the code of ethics under which *katakiuchi* was possible. Under the modern laws it exists no longer. Consult the voluminous literature of the subject, both native and European; in Japanese, the *I-ro-ha Bunko* and its sequel, the *Yuki No Akébono*; Mitford, *Tales of Old Japan* (2d ed., London, 1874); Dickens, *Chushingura, or the Loyal League* (New York, 1876).

KATALA. An Alaskan seaport on Controller Bay. Its population in 1910 was 188 (Map: Alaska, K 5). It is the coast terminus of the Copper River and Northwestern Railroad, which connects with the Copper River Railroad of 195 miles, extending from Cordova to Kennicott, Nizina valley. At Kennicott is the Kennicott-Bonanza copper mine, one of the richest and most productive in Alaska. Under the Act of Congress of April, 1914, the United States contemplates extensions of the Copper River railway system as follows. From Chitna to Fairbanks, 313 miles, branch of 38 miles to the Bering coal fields, via Lake Charlotte

KATAMORPHISM. See METAMORPHISM

KATCH, RANN OF. See CUTCH, GULF OF, INDUS.

KATE, ká'te, JAN JACOB LODEWIJK TEN (1819-89). A Dutch poet, born at The Hague. He studied theology at Utrecht, where he made the acquaintance of Van den Bergh the Elder and of the lexicographer Winkler Prins, and where he wrote much poetry. With Prins in 1842 and 1843 he wrote the satiric periodical *Braga*, which was entirely composed in verse, of which he had a wonderful command, being a ready and fluent improvisator. Ten Kate entered the ministry of the Reformed church and from 1860 was pastor of a church in Amsterdam. Besides some sketches of travel and some purely theological works, he wrote translations from Hebrew, Psalms (1872), and several of the minor prophets. from Luther's hymns, Chamisso's poetry, and from Schiller and Goethe (*Faust*); from Tegner and Charles XV; from Andersen and Oehlenschläger, Hugo's lyrics; Tasso's *Gerusalemme* (1856) and Dante's *Inferno* (1876), and Byron's *Graour* and Milton's *Paradise Lost*. His original poems, popular at home and frequently translated into French and German, are mostly of theological tenor. The best known are: *De Schepping* (1866); *De Planeten* (1869); *De Jaargetijden* (1871); *Palmbladen en dichtbloemen* (1884). His collected works appeared at Leyden (12 vols., 1890-91). Consult Jan ten Brink, in *Onze Hedendaagsche letterkundigen met bijschriften* (Amsterdam, 1884), and "Werken van Jan Jacob Lodewijk ten Kate," in *Geschiedenis der Noord-Nederlandsche letteren in de 19e eeuw*, vol. ii (ib., 1888).

KATER, HENRY (1777-1835). An English scientist who devoted himself to the study of mechanics and the exact sciences. He was born in Bristol and died in London. At his father's desire he began the study of the law, but in 1794

he relinquished his legal studies and obtained a commission in the Twelfth Regiment of foot, then stationed in India. During the following year he was engaged under Colonel Lambton in the survey of India and on his return, in 1808, became a student in the senior department of the Royal Military College at Sandhurst and was shortly afterward promoted to a company in the Sixty-second Regiment. His contributions to science are chiefly to be found in the *Philosophical Transactions*, the most important of these memoirs being those relating to his determination of the length of the seconds pendulum at the latitude of London and those which describe his "floating collimator," an instrument for aiding the determination of the horizontal or zenith points. For the invention of this instrument he received the gold medal of the Royal Astronomical Society. The reversible pendulum (qv) which he devised (1818) enables the physicist to determine the length of the simple pendulum at any point on the earth's surface and in a modified form is still in use. In 1821-23 he was associated with Arago, Mathieu, and Colby in making observations to determine the differences of longitude between the Greenwich and Paris observatories. His memoirs on the verification and comparison of the standards of weights and measures of Great Britain and Ireland induced the Emperor of Russia to employ him to construct standards for the weights and measures of that country, and for these labors he received the order of St Anne and a diamond snuffbox. His many scientific papers will be found in the *Philosophical Transactions*, *Astronomische Nachrichten*, *Astronomical Society Monthly*, and *Astronomical Society Memoirs*.

KATHERINE. In Shakespeare's *Taming of the Shrew*, the spirited daughter of Baptista, whose subduing by her husband, Petruchio, gives the comedy its title.

KATHIAWAR, kâ'tê-a-wâr'. A peninsula on the west coast of India, part of the Province of Gujarat, Presidency of Bombay. On the northwest is the Gulf of Cutch, the Gulf of Cambay on the southeast, and the Arabian Sea on the west and south (Map India, B 5). Cotton is the chief staple. There are a few industries, such as the making of gold and silver thread, powders, oils, and perfumes. Politically the region is divided among 187 native chiefs under the protection of the British government. Area (of political agency), 20,911 square miles. Pop., 1901, 2,329,196, 1911, 2,496,057. . . . The towns are Rajkot, Navanagar, . . . and Somnath. The Portuguese port of Diu is on a small island off the south coast.

KATHLEEN MAVOURNEEN, kâth'lên ma-vôor'nên. A ballad by Louise M. Crawford.

KATIPO, kâ'tê-pô. A small venomous spider (*Latrodectus scelo*, Thorel) of New Zealand and Australia. In New Zealand it is generally found on the beach under old driftwood, but in Australia it is found widely scattered over the continent and always frequents dark sheltered spots. It is dark-colored, with a bright red or yellowish stripe. The name is Maori and may be derived from *kakati*, to sting, and *po*, night, cf. *kakapo*, night parrot.

KATIPUNAN (kâ'tê-pôo-nân') **SOCIETY.** A Filipino secret society, organized some time during the early part of the last decade of the nineteenth century to oppose Spanish supremacy

in the archipelago. It was formed under the leadership of Andres Bonafacio, a schoolmaster or warehouse keeper of Cavite, and its principal object was to expel all foreigners from the Philippines. The basis of its organization and discipline was military. Wherever 100 men can be assembled there is to be a "superior chief," with rank of colonel. Under him are principal chiefs, partial chiefs, captains (*cabezas*), and men. Each rank knows only those below it. The duties of the men are fivefold, viz., to obey orders, to contribute provisions and clothing, to act as spies against all suspected persons, to be ready to sacrifice property, family, or life for the society, and to take the field as guerrillas at a moment's notice. Each signs an oath in his own blood, swearing under most revolting penalties to serve the society. All other oaths are absolved by this, and the native leads a life of fear, not knowing when the knife may end his career. The reckless daring of the Filipino is largely due to the terror inspired by this organization. In 1895-96 a widespread conspiracy was discovered, and some 300 of the Katipunian leaders were arrested. From this time the society was in open opposition and rebellion against the Spanish government and later opposed the United States. During the Spanish-American War the Filipinos, controlled and led by Agumaldo, a member, declared their independence and drew up a constitution at Malolos. When the forces of the society, under Agumaldo, were broken and defeated, opposition to the United States assumed the character of guerrilla warfare. During this time native affairs were controlled by this society. Agumaldo proclaimed that every male Filipino in every hamlet and barrio should be subject to its regulations. While the society continued to exist after the capture of Agumaldo and the pacification of the Philippines, its numbers have been supposed to have decreased and its influence to have weakened. The truth of this statement has not, however, been demonstratively established.

KATKOV, kat-kôf', MIKHAIL NIKIFOROVITCH (1818-87). A Russian publicist of international reputation. He studied at Moscow, at Königsberg, and at Berlin, where he was particularly attracted by Schelling. In 1840 he published a valuable essay *On Russian Popular Songs*, expressing views of an ardent liberal and adherent of the party of Westerners. For his dissertation *On the Elements and Forms of the Slavo-Russian Tongue* (1845) he was appointed adjunct in philosophy at Moscow, which position he held until 1850, when lectures on philosophy were intrusted to professors of theology. In 1851 he was officially appointed editor of the Moscow *Intelligencer*, which he leased in 1863. By this time Katkov's ideas had undergone a radical change, and apparently he needed but a pretext for an open break with his former associates. The disorders among the peasants and university students in 1861-62, and especially the Polish revolution of 1863, gave Katkov the chance of his life. He accused the Nihilists Chernyshevsky, Herzen, and Bakunin (qv.) as the real originators of all the trouble, and from a liberal turned into a reactionary advocate of absolutism and unprincipled and aimless nationalism. His paper became an exponent rather than a leader of public opinion, harshly criticizing the government for half-hearted measures in suppressing treason,

which he saw everywhere. Until his death he wielded an enormous influence on Russian politics, being the personal adviser of Alexander III. His journalistic papers have been collected in 25 volumes (Moscow, 1863-87; 2d ed., 1897-98). Consult E. Maschte, "Michail Nikiforowitsch Katkof," in *Nord und Sud*, vol. xciv (Breslau, 1900).

KATMAI, kát'mí, MOUNT. An active volcanic peak of 7500 feet elevation, on Alaska Peninsula, 100 miles northwest of Kodiak Island (Map: Alaska, H 6). It was supposed to be a dead volcano until its outbreak of June 6, 1912, which was one of the most violent eruptions seen by man. At Kodiak darkness lasted for 60 hours, and the ash deposits averaged a foot deep. There were signs of its renewed activity during the year 1914.

KAT'MANDU'. See KHATMANDU.

KATO, kát'ó, or **KAI-POMO**, kí'pō'mó. An Athapascan tribe, formerly living in the Cahto valley, Mendocino Co., Cal. Though of a different linguistic family, their culture resembles that of the Pomo, hence the name. Consult P. E. Goddard, "Kato Texts," in *University of California Publications, American Archaeology and Ethnology*, vol. v (Berkeley, 1909).

KATO, kát'ó, TAKA-AKIRA, BARON (1859-). A Japanese diplomat and statesman, born at Nagoya. He was educated at the University of Tokyo, was employed for a time by the Mitsubishi (steamship) Kaisha, and in 1888-90 was private secretary to Count Okuma, then Minister of Foreign Affairs. He was in the Finance Department in 1891-94 as director of the banking and taxation bureaus, was Japanese Envoy to the Court of St. James's in 1894-99 and in 1908-13, and was thrice Minister of Foreign Affairs—in 1900-01, in January-March, 1906, and in January-February, 1913. In 1904 he became proprietor of the influential newspaper *Nichi-Nichi*. He was made Baron in 1911.

KATO, TOMOSABURO (1859-). A Japanese naval officer, born in Hiroshima. He became a midshipman in 1883 and had attained the grade of captain in 1899 before he was appointed professor at the Naval Academy. After serving as sectional chief and construction supervisor, in 1902 he became chief staff officer of the standing squadron. In the war with Russia he was chief of staff of the Kamimura squadron, and at the close of the war became a bureau chief. He was promoted vice admiral in 1908 and became commander of the Kure admiralty in 1909. In 1914 he commanded the Japanese fleet which attacked the Germans at Tsing-Tao (q.v.).

KATONA, kát'ó-nó, JÓZSEF (1792-1830). An Hungarian dramatic poet, born at Kecskemét. His earlier efforts suffered from a too close dependence upon German models, but in his masterpiece, *Bánk Bán*, he was distinctly national and original. He wrote the play in 1815, but it was not performed until six years afterward, in Budapest. It is still a popular play on the Hungarian stage. His poems, essays, and other works were collected in three volumes 50 years after his death.

KATRINE, kát'rin, LOCH. A lake in Perthshire, Scotland, famous for its beautiful scenery, which has been immortalized by Scott and Wordsworth (Map: Scotland, D 3). It is of serpentine form, 8 miles long and $\frac{3}{4}$ of a mile in average width. Ben Venue (2393 feet), Ben A'an, and the Trossachs are on its banks. There

are several islets, one of which, Ellen's Isle, is the central scene of action of Scott's *Lady of the Lake*. Steamers ply on its waters, and it is annually visited by large numbers of tourists. As the main source of Glasgow's water supply, the water being conducted by a tunnel and aqueducts for a distance of 25 miles, the level of the lake has been raised so as to flood, in part, Ellen's Isle.

KATSENA, kát'sē-ná. A town in the northern part of Kano, British Nigeria, Central Africa, 84 miles northwest of Kano (Map: Africa, E 3). It was formerly the largest town and capital of the Hausa territories. It is surrounded by a high wall, but its buildings are mostly in ruins. It began to decline as a result of the seven years' siege by the Fulahs in the beginning of the nineteenth century, from which it never recovered. It came under British control in 1903. Its population, once said to number 100,000, is now estimated at 7500.

KATSŪ AWA, kát'sū ā'wā (c. 1820-96). A Japanese statesman, born at Shidzuoka, in Suruga Province. A diligent student in youth, he made himself familiar with the literature of China, Japan, and Holland. He commanded a company of soldiers in the army set to guard the country at the time of Perry's landing in 1854. In May, 1855, he was sent with others to Nagasaki to learn from the Dutch how to manage steam vessels. He made such progress that in 1861 he navigated the first Japanese steamship across the Pacific Ocean and was active in having built the first native man-of-war on foreign models. He advised against the Yeddo government's attempting to chastise the Choshu clan, in which disastrous campaign the prestige of the Tokugawa family was irretrievably ruined. In the civil war of 1868 his friendship with Saigō (q.v.) probably saved Yeddo from being burned. His life was several times attempted by assassins. He retired to Shidzuoka with his master, the Shogun Kōiki (q.v.), but he was later called by the Mikado to Tokyo to become Minister of the Navy Department. In 1874 he opposed the project of war with Korea and, resigning his office, gave himself to study. He wrote a history of the modern Japanese navy.

KATSUO, kát'sō-ō. In Japan, any of various tunnies, varying from 1 to 4 feet in length, which are among the sea fish most extensively taken. The dried fish of Japan are mainly of this kind and are called katsuobushi, amounting in quantity to about 5,000,000 catics annually.

KATSURA, kát'sō-ō-ra, TARO, PRINCE (1847-1913). A Japanese statesman and soldier, born in Choshu. He fought on the Imperialist side in the War of the Restoration, was sent abroad to study military science, was Vice Minister of War in 1886-91, and led a division in the war against China, for his services being made Viscount. After the war he became Governor-General of Formosa, held the portfolio of War in 1898-1900, and in June, 1901, formed a cabinet which by means of skillful tactics maintained its position till January, 1906, when the unpopularity of the Peace of Portsmouth forced it to resign. He was Prime Minister again in 1908-11, also holding the post of Minister of Finance, and a third time, from December, 1912, to February, 1913. For bringing about the Anglo-Japanese Alliance he was made Count; after the Russo-Japanese War, during which he had been head of the adminis-

tration, he was created Marquis, and after the annexation of Korea in 1911 his title was made Prince. In 1912 he founded a new political party called Rikkendoshikai.

KATTE, kât, EDWIN BRITTON (1871-). An American electrical engineer, a son of Walter Katte. Born at St. Louis, Mo., he graduated from Cornell University (M.E.) in 1893; studied and served as apprentice in the H. R. Worthington shops, Brooklyn, N. Y., in 1894-96, and for two years was assistant engineer to the Park Avenue Improvement Commission of New York City. Thereafter he was successively draftsman, assistant engineer, mechanical engineer, and electrical engineer of the New York Central and Hudson River Railroad, becoming chief engineer in 1906, with full charge of design, construction, and operation of the electrical traction systems. In 1914 he was vice president of the American Society of Mechanical Engineers.

KATTE, kât'te, HANS HERMANN VON (1704-30). A friend of Frederick the Great while he was Crown Prince. He disobeyed the King's order that he should have nothing more to do with the young Crown Prince, who was ardently attached to him, and in whose plans to escape he took a part. But the plot was discovered, and Katte was executed, Frederick being compelled to witness his death from a palace window.

KATTE, kât, WALTER (1830-). An American civil engineer, the father of Edwin Britton Katte. He was born and educated in England, coming to the United States in 1850. In 1857 he was resident engineer of the State canals of Pennsylvania and from that time until the outbreak of the Civil War held responsible positions as an engineer of various railroads. During 1861-62 he was in the service of the Federal government in military railway work. During 1865-75, while connected with the Baltimore and Annapolis Bridge Company of Pittsburgh, he superintended the building of the St. Louis steel arch bridge and afterward, until his retirement in 1899, was chief engineer of several railroads, including the Manhattan Elevated in New York City and the New York Central system.

KATTEGAT. See CATTEGAT.

KATTENBUSCH, kât'en-bush, FERDINAND (1851-). A German Protestant theologian, born in Kettwig in the Rhine Province. He was educated at Bonn, Berlin, and Halle, studied theology and became docent at Göttingen, and from 1878 to 1904 was professor at Giessen, in 1904-06 at Göttingen, and then at Halle, where he was rector of the university in 1913. He devoted himself particularly to the history of creeds and symbols, and his most important work is *Das apostolische Symbol* (1894-1900). Among his other books are: *Luthers Lehre vom unfreien Willen* (1875); *Der christliche Unsterblichkeitsglaube* (1881); *Ueber religiösen Glauben im Sinne des Christentums* (1887); *Vergleichende Konfessionskunde* (1892 et seq.); *Von Schleiermacher zu Ritschl* (1892; 3d ed., 1903); *Die Kirchen und Sekten des Christentums in der Gegenwart* (1909). He contributed to the Herzog-Hauck *Real-Encyclopädie*.

KAT'TIMUN'DOO, or **CATTIMUNDOO** (East Indian name). A substance which resembles gutta-percha, derived from the milky juice of *Euphorbia trigona*, an East Indian plant. It is obtained either as a natural gum, which has

oozed through the bark, or more commonly by making incisions and collecting the juice. It is used in India as a cement for knife handles and for similar purposes. While fresh, it is very elastic, but in course of time becomes resinous or brittle.

KATTOWITZ, ká'tô-vits. A town in the Province of Silesia, Prussia, on the Rawa, 105 miles southeast of Breslau. It has important iron and zinc works, has manufactures of phosphor bronze, furniture, creosoted block, roofing paper, bricks, and machinery, and is the centre of the upper Silesian coal trade. It has a railway-repair shop. Pop., 1890, 16,513; 1900, 31,745; 1910, 43,973. Kattowitz was an unimportant village until 1867, when it was made a city. Its growth is due to the discovery of minerals near by.

KATUN, ka-tōōn'. A cycle of 20 years, peculiar to the calendar of the Maya tribes. It was subdivided into five parts of four years each. The years were counted around the circumference of the calendar wheel, and the conclusion of each katun cycle was noted by the placing of a commemorative stone in the wall of the principal temple. Thirteen of these cycles made up the *ahau katun*, or great cycle of 260 years. The etymology of the term is disputed. Consult Joyce, *Mexican Archaeology* (London, 1914).

KATUN'GA. An important native trading town in British Sudan, West Africa, situated about 80 miles south of Bussa. Pop. (est.), 15,000.

KĀTYĀYANA, kat-yū'ya-na. A name of great celebrity in the literary history of India. It belongs, in all probability, to several personages renowned for their contributions to the grammatical and ritual literature of the Brahmanical Hindus, but it is met with also among the names of the chief disciples of the Buddha, Sakyamuni. The most celebrated personage of this name, however, is Kātyāyana, the critic of the great grammarian Panini (q.v.), and he is most likely the same as the Kātyāyana to whose name is attached a ritual manual, the *Srauta Sutra* of the White Yajur-Veda, also the *Sarvānu-kramanī*, a sort of Vedic concordance of about 46 pages, and other treatises connected with the White Yajur-Veda. Kātyāyana is well known as a grammarian through his critical notes or supplementary additions to Panini. These are called *l'ārttikās*, explanations or additional rules. They treat of about one-third of Panini's aphorisms, and they are of special value. Kātyāyana's additions and corrections were gathered up and commented on in turn by Patanjali (q.v.). The territory to which Kātyāyana belonged was Deccan, and his date appears to have been the third century B.C. On the Kātyāyana *Srauta Sutra*, consult Weber, *White Yajur-Veda* (London, 1859), and Macdonell, *History of Sanskrit Literature* (ib., 1913).

KĀ'TYDID. A popular name for several species of long-horned grasshoppers, usually of a pale-green color. Those to which this name specifically applies are natives of North America and are abundant in some parts of the United States. Their peculiar note is always to be heard during the summer and perhaps most abundantly in the evening twilight, although sometimes in the daytime. The note of one species is almost like a shrill articulation of the three syllables, "ka-ty-did," following each

other in quick succession, after which there is a pause of two or three minutes. Modified wing membranes, by the overlapping of the wing covers, can be made to rub against one another, and the sound is produced by the friction. It is a noticeable fact that with these insects the day note differs from the night note. The common species in northern New England is the narrow-winged katydid (*Scudderella curvicauda*). The broad-winged katydid is also a common northeastern species (*Cyrtophyllus perspicillatus*), and another species is the oblong-winged katydid (*Amblycorypha oblongifolia*). The species commonly known as the angular-winged katydid (*Microcentrum retinervis*) is abundant throughout the more southern portions of the United States extending as far north as New Jersey on the Atlantic coast. It hibernates in the egg stage. The eggs are flattened oval and of a slate-brown color and are laid in a double, overlapping row on the twigs



A KATYDID.

The common angular-winged katydid (*Microcentrum retinervis*), and its eggs, attached to the edge of a leaf.

of trees, the edges of leaves, and in other places. Females lay their eggs in the early fall and continue to lay at intervals until killed by frost, each female laying from 100 to 150 eggs. In the spring the egg splits along its top edge, and the young katydid, very pale in color, emerges. In its northern range this species is single-brooded, but in the Southern States there are two generations annually. The eggs of this species are stung by the curious chalcidid parasite *Eupelmus mirabilis*, which has been called the "back-rolling wonder," from the fact that its abdomen is frequently turned backward and upward until it nearly reaches the head, the hind wings being turned in the same direction, so that the insect almost forms a ball. See LOCUST.

KATZBACH, kät's'bäch. A small river in the Prussian Province of Silesia, falling into the Oder at Parchwitz. It is celebrated for the battle fought on its banks on Aug. 26, 1813, between the French troops under Marshal Macdonald and the Prussians under Blücher, in which the latter were completely victorious. Macdonald was unaware of the presence of the Prussians on the other side of the Katzbach when he began to ford the stream. Blücher waited until half the French army had crossed, then swept down on them with his cavalry and two corps of bayonets, and hurled them into the waters of the Katzbach, killing and wounding 12,000, and taking 18,000 prisoners, together with 143 cannons and 2 eagles.

KATZENSTEG, kät's'en-shtāk', DER (Ger., The Cat's Bridge). A novel by Hermann Suder-

mann (1889), considered one of his best works of fiction.

KAUAI, kă'u-ä'ä. The northernmost of the Hawaiian Islands, situated in lat. 22° N. and long. 159° 30' W. (Map: Hawaii, B 1). It is almost circular in shape, is of volcanic origin, and is composed chiefly of basaltic rocks. The surface is elevated, reaching in the highest peak of the island, Waialeale, an altitude of about 6000 feet, a large part of it is under forests. The coasts are partly low and sandy and partly precipitous. The island is well watered, chief among its streams being Hanalei. In spite of its volcanic origin, Kauai has a goodly proportion of agricultural land of unusual fertility, confined mainly to the north. Sugar is the chief product, but tropical fruits are grown in abundance. The chief harbors are Hanalei, Koloa, Waimea, and Nawiliwili. Pop., 1910, 11,859, including the adjacent islet of Niihau. Area, 590 square miles. See HAWAIIAN ISLANDS.

KAUFFMAN, kăf'man, REGINALD WRIGHT (1877-). An American author, born at Columbia, Pa. After special work at Harvard University (1896-97), he was a reporter and then an editorial and special writer for the *Philadelphia Press*, associate editor of the *Saturday Evening Post* (1904-07), associate editor of the *Delinquent* and dramatic critic of the *Philadelphia North American*, and managing editor of *Hampton's Magazine* (1909). He wrote *The Things that Are Caesar's* (1902); *The Chasm* (1903); *The Bachelor's Guide to Matrimony* (1907); *What is Socialism?* (1910); *The House of Bondage* (1910); *The Sentence of Silence* (1912; new ed., 1914); *The Spider's Web* (1913); *Jam* (1914).

KAUFFMANN, kouf'män, ANGELICA (1741-1807). A Swiss historical and portrait painter, born at Chur, Switzerland, Oct. 30, 1741. She was taught by her father, Johann Josef Kauffmann, a painter of some talent. At an early age Angelica displayed such talent that her father took her to Italy. At Como, in 1752, she executed a portrait in pastel of the Bishop of Como, which attracted much attention. She studied in the galleries of Milan in 1754, also painting portraits, among them several of the Duchess of Carrara. In 1757 she assisted her father in the decoration of the church at Schwarzenberg, painting 12 full-length figures of the Apostles, and also in decorating the seats of the counts of Montfort. She then studied in northern Italy, especially at Florence, where she remained seven months, developing a remarkable talent for music and song. In 1763, at Rome, she studied ancient art under Winckelmann, who became her fast friend, and whose portrait (now in the Städel Museum, Frankfurt) she painted. At this time she made a study of historical and allegorical compositions.

In 1765 her English friends persuaded her to go to England; after spending a year studying at Venice, she arrived in London in 1766. She was received with great favor, her charm of manner, as well as her art, winning for her many friends. She was fêted by the aristocracy and presented at court. Among her admirers were Goldsmith, Garrick, Fuseli, and Sir Joshua Reynolds. She was one of the original members of the Royal Academy in 1769 and for years afterward was a prominent exhibitor at the Academy. She was also successful as an interior decorator and as an engraver and etcher. There are 31 plates, with at least 200

of her original drawings, at the British Museum. Her life was embittered by a secret marriage, in 1767, with an impostor, a supposed Swedish Count Horn. The Pope annulled the marriage, and in 1781 she married Antonio Zucchi, a Venetian painter, with whom she returned to Italy the same year. After acting as teacher of design to the Princess of Naples, she settled at Rome, where her house became the centre of a coterie of scholars and artists, among whom was Goethe, who has given a trenchant characterization of her art. She remained in Rome until her death, Nov 5, 1807. She was honored by a splendid funeral under the direction of Canova, and her bust was placed in the Pantheon.

Angelica Kauffmann excelled in single figures and in portraits, especially those of women. Her historical paintings are poor in composition; the figures are without variety or passion and lack virility, but they are marked by grace and charm and are always pleasing. Among the historical paintings of her early period (before 1781) are: "Mother of the Gracchi", "Sacrifice of Messalina", "Edgar and Ethelfrida", "Anna and Abra", "Samma at Bonnoni's Grave". Especially good is "Psyche Drying Cupid's Tears". Her other works include "Death of Leonardo da Vinci" (1781), "Servius Tullius as a Child" (1784), "Adieux of Abelard and Héloïse", "Hermitage, St Petersburg", "Ariadne"; "Abandoned", the "Sybil," and the well-known "Vestal Virgin," in the Dresden Gallery; "Christ and the Woman of Samaria" (1799); "Virtue Directed by Prudence to Withstand the Solicitations of Folly" (now in Philadelphia), painted with her husband. Among her best portraits are those of herself in the National Gallery (London), the Berlin Museum, the Munich and Uffizi galleries (Florence); Raphael Mengs and Lady Hamilton, in the South Kensington Museum.

Consult: De Rossi, *Vita di Angelica Kauffmann* (Florence, 1810); Wessely, in Dohme, *Kunst und Künstler* (Leipzig, 1817); Schram, *Die Malerin Angelika Kauffmann* (Brünn, 1890); Gerard, *Angelica Kauffmann* (London, 1893); Engels, *Angelika Kauffmann* (Bielefeld, 1892); "Angelica Kauffmann," in *Illustrirte Zeitung* (Leipzig, June, 1903).

KAUFFMANN, FRIEDRICH (1863–). A German scholar. He was born at Stuttgart, attended the universities at Tübingen and Freiburg, and was professor successively at Halle, Jena, and after 1895 at Kiel. Besides serving as an editor of the *Zeitschrift für deutsche Philologie* and as a contributor to Paul's *Grundriss der germanischen Philologie*, he published: *Deutsche Grammatik* (3d ed., 1902); *Geschichte der schwabischen Mundart* (1890), *Deutsche Mythologie* (last ed., 1892), *Deutsche Metrik* (1897); *Philipp Melanchthon* (1897); *Goethe* (1899); *Texte und Untersuchungen zur altgermanischen Religionsgeschichte* (vol. i, Wulfila, 1899; vol. ii, Balder, 1902).

KAUFMANN. The correct name of the German mathematician Nicolaus Mercator (q.v.).

KAUFMANN, ALEXANDER (1817–93). A German poet, born in Bonn. He studied law in the university of his native city and Berlin, but his preference was always for the literature and history of the Middle Ages. From 1850 he was archivist to the Prince of Löwenstein in Wertheim. He published several volumes of verse, whose freshness and vigor soon made him

one of the favorite poets of the Rhineland. In 1857 he married the Nuremberg poet Mathilde Binder, who, under the pen name of Amara George, wrote *Blüten der Nacht* (1856) and *Indianermythen* (1856). Kaufmann's works include: *Casarius von Heisterbach* (1862); *Gedichte* (1852), *Mainsagen* (1853); *Unter den Reben* (1872); and, in collaboration with his wife, *Mythotierpe* (1858).

KAUFMANN, GEORG HEINRICH (1842–). A German historian, born at Münden and educated at Halle and at Göttingen, where he studied under Waitz. From 1865 to 1888 he taught in the Gymnasium of Göttingen and the lyceum of Strassburg. He became professor of history at Münster (1889) and then (1891) at Breslau, where he was rector in 1905–06. His chief works are: *Deutsche Geschichte bis auf Karl den Grossen* (1880–81); *Geschichte der deutschen Universitäten* (1888–96); *Politische Geschichte Deutschlands im neunzehnten Jahrhundert* (1900); *Die Legende vom heiligen ungenährten Rock in Trier* (2d ed., 1904). With Bauch and Reh he edited *Akten und Urkunden der Universität Frankfurt-an-der-Oder* (1897–1903).

KAUFMANN, KONSTANTIN PETROVITCH (1818–82). A Russian general, born near Ivanogorod. He won distinction first as an engineer and afterward served as chief of staff in Caucasia. Later he served for a time in the War Department and aided in reorganizing the army. Rising gradually in rank and governmental favor, he was made Governor-General of the Northwestern Region and commander of the troops of the Military Division of Vilna in 1865 and of the newly formed Division of Turkestan two years later. In the latter position, especially, he won great distinction by his success in strengthening and extending Russian influence in Central Asia. He waged a successful war against Bokhara, took Samarkand in 1868, subjugated the Khan of Khiva in 1873, and annexed what was left of the old Khanate of Khokand.

KAUFMANN, MORITZ (1839–). An English clergyman and writer on social reform. He was born in Gross-Sachsen, near Weinheim, Baden, and was educated at Trinity College, Dublin. From 1877 to 1883 he was tutor at St Aidan's, Birkenhead, in 1884–92 curate of Erpingham, after 1892 rector of Ingworth, and after 1893 vicar of Calthorpe. In 1899–1900 he was Donnellan lecturer to the University of Dublin. He wrote: *Socialism* (1874; based on Schäffle's *Kapitalismus und Socialismus*); *Utopias, or Social Schemes of Improvement from Sir Thomas More to Karl Marx* (1879); *Christian Socialism* (1888); *Charles Kingsley* (1892); *Socialism and Modern Thought* (1895); *The Housing of the Working Classes and of the Poor*.

KAUFMANN, RICHARD VON (1850–1908). A German economist, born in Cologne. He studied at the universities of Bonn, Heidelberg, and Berlin, became a teacher and a professor, and for a short time held a position in the Finance Ministry. His numerous publications include: *Die Vertretung der wirtschaftlichen Interessen in den Staaten Europas* (1879); *L'Association douanière de l'Europe centrale* (1879); *Die Finanzen Frankreichs* (1882), translated into French by Dulaurier, *Die öffentlichen Ausgaben der grösseren europäischen Länder nach ihrer Zweckbestimmung* (3d ed., 1893); *Die Kom-*

municipal finances: Grossbritannien, Frankreich, Preussen (2 vols., 1906). He became known also through his archaeological work and through the excavations in Syria, Asia Minor, and Egypt suggested by him.

KAUKAUNA, ka-ka'na. A city in Outagamie Co., Wis., 7 miles by rail east by north of Appleton, on the Fox River, and on the Chicago and Northwestern Railroad (Map: Wisconsin, E 4). It has good water power, used by a number of the industrial establishments, which include, besides the shops of the Chicago and Northwestern Railroad, pulp and paper mills, brick and tile works, a planing mill, a foundry and machine shop, sulphate and sulphite mills, etc. The water works and electric light plant are owned by the municipality. Pop., 1910, 4717.

KAULBACH, koul'bach. A family of distinguished German painters. (Its founder and most celebrated member, **WILHELM VON KAULBACH**, is treated in a separate article.)—**FRIEDRICH KAULBACH** (1822–1903), an historical and portrait painter, born at Arolsen, Waldeck, was a nephew and pupil of Wilhelm. Although his "Coronation of Charlemagne" (1869, Maximilianeum, Munich) proves his ability for compositions on a large scale, he excelled chiefly in portraiture and was much employed by royalty. Among his best portraits are those of the Empress Elizabeth of Austria and of the sculptor Elisabeth Ney (1860, Hanover Museum). He was appointed court painter and professor at the Polytechnic Institute in Hanover and in 1874 was elected a member of the Berlin Academy.

HERMANN KAULBACH (1846–1909), a genre painter, was born in Munich, the son of Wilhelm. He studied under Piloty and treats interesting subjects, for the greater part historical genre scenes, with rare coloristic charm and minuteness of detail. Especially noteworthy are: "Hansel and Gretel with the Witch" (1872, Municipal Gallery, Riga), "Last Days of Mozart" (1873, Municipal Gallery, Vienna); "Sebastian Bach Playing the Organ before Frederick the Great" (1875); "Coronation of St. Elizabeth" (1886, Wiesbaden Gallery), "At a Friend's Grave" (1888, New Pinakothek, Munich). He was made professor in 1888.

FRIEDRICH AUGUST KAULBACH (1850–), a genre and portrait painter, was born in Munich, the son of Friedrich, from whom he derived his first instruction. He then studied under Kreling and Raupp at Nuremberg and under Diez in Munich. The elegant treatment and brilliant coloring of his genre scenes in the spirit of the German renaissance and other historic periods, the style of which he adopted with an amazing facility and eclecticism, won for him speedy recognition, as might be expected from such works as "Cavalier and Lady's Maid" (1873), "A Day in May" (1879, Dresden Gallery), "Schützenlied" (1881; a well-known tavern picture), the "Luteplayer" (1882, Vienna Museum), and many others. After his stay in Paris in 1881 he devoted himself chiefly to portraiture. Lending the elegance of Van Dyck with the chic of a modern Frenchman, he became the most popular portrait painter of Munich. Among familiar examples of this later work are the portraits of his wife, Frida Scotta the violinist (Frankfort and Munich); his father and mother, Princess Gisela; the Prince Regent of Bavaria (Munich); Emperor Wil-

liam II (Cologne); Empress Auguste Victoria, with daughter; and the American dancer Ruth St. Denis. Of religious subjects, he painted an "Entombment" (1892, Munich). His exquisite paintings on fans and his caricatures also deserve special comment. From 1886 to 1891 he was director of the Munich Academy, succeeding Piloty. He was made a member of the Berlin Academy and was awarded the great gold medal at the Berlin exhibition in 1886. For his biography, consult Graul (Vienna, 1890) and Rosenberg (Bielefeld, 1900).

KAULBACH, WILHELM VON (1805–74). A German historical painter. He was born at Arolsen, Westphalia, Oct. 15, 1805. His first lessons in design were from his father, a goldsmith and line engraver, and in 1821–25 he studied at Düsseldorf under Cornelius and Mosler. He followed Cornelius to Munich in 1826 and decorated the Odeon there with frescoes of Apollo and the Muses, in the style of his master. In the same style are his frescoes in the arcades of the court garden, with figures of Bavaria and her four chief rivers. Of quite different character was his "Madhouse" ("Irrenhaus," 1834), based on reminiscences of an insane asylum at Düsseldorf, which he decorated with frescoes—an intensely naturalistic production. His 16 frescoes of the story of Cupid and Psyche, in Prince Maximilian's palace, on the other hand, were antique in style. Besides the foregoing, Kaulbach designed for King Louis the decorations of the Königsbau from Klopstock, Wieland, and Goethe. In 1834 he finished the cartoon of the "Battle of the Huns." His "Destruction of Jerusalem by Titus," designed in 1837–38, is a strange conglomeration of history and symbolism. There is a fine replica in oil in the Munich Pinakothek.

In 1847 Kaulbach succeeded Cornelius as director of the Munich Academy. In his designs for frescoes for the exterior of the New Pinakothek, glorifying the development of the arts under Louis I, he introduced an element of satire which aroused great opposition. His decorations for the staircase of the Berlin Museum (1847–66) are an apotheosis of the evolution of human culture, in six colossal mural paintings, representing the chief epochs, "The Fall of Babel," "Greek Culture," "Destruction of Jerusalem," "Battle of the Huns," "The Crusaders before Jerusalem," "Age of the Reformation." In 1859 he painted "Otho III in the Vault of Charlemagne," for the Germanic Museum at Nuremberg. His satire had already excited the wrath of the Ultramontane party, and Kaulbach retorted in 1871 with a grisaille cartoon in oil of Peter Arbus. His last works, like the "Battle of Salamis," in the Maximilianeum, Munich, and "Nero," show decline. During this period he painted a number of portraits, severe and distinguished in style, among the best of which are one of himself, in the Germanic Museum, Nuremberg, and Louis I and Maximilian II, in the New Pinakothek. He was loaded with honors, German and foreign, being made an Officer of the Legion of Honor and corresponding member of the Institut de France, Grand Commander of the Order of St Michael, etc. He died of the cholera at Munich, April 7, 1874.

Kaulbach is well known as a designer for engravings. In this work his satire and skillful portrayal of character had full play. He made a thorough study of Hogarth, as is evident in

his illustrations of Schiller's *Verbrecher aus verlorenen Ehre* and Goethe's *Faust*. He also designed a "Shakespeare Gallerie" and a "Goethe Gallerie." Best of all are his illustrations of Goethe's *Reineke Fuchs*, in imitation of Grandville's *Scènes de la vie des animaux*.

Kaulbach's works express the historical knowledge and philosophic thought of his age. He was endowed by nature with a fine sense of form and a strong power of characterization, but under the influence of the Cornelian school his figures became sensuous, and his characterization degenerated into satire. Among his sitters were the Emperor of Austria, Frederick William as Crown Prince and his three sons, and Prince Albrecht of Prussia. Consult H. Müller, *Wilhelm von Kaulbach* (Berlin, 1893); Bertha Riehl, "Wilhelm von Kaulbach," in *Die Kunst unserer Zeit*, vol. xvi (Munich, 1905); and especially Fritz von Ostini, "Wilhelm von Kaulbach," in *Künstler Monographien*, No. 84 (Bielefeld, 1906).

KAULBARS, koul'bärs, ALEXANDER, BARON (1844-). A Russian general and explorer, brother of Nikolai Kaulbars. He was born in St. Petersburg and there received his military education. In 1869, having been sent to Central Asia on military service, he climbed the Tian-Shan Mountains and was the first to reach the headwaters of the Naryn and to explore the region lying beyond Lake Issyk-Kul. The results of these explorations are set forth in his monograph "Materials for the Geography of Tian-Shan" which brought him the Russian Geographical Society's gold medal. In 1870 he explored part of the Russian-Japanese boundary, visiting China the following year and the District of Kulja in 1872. In 1873 he participated in the Khivanian expedition, exploring the delta and old channels of the Amu-Darya and finding a navigable course from the Sea of Aral to that river. The results of these studies Kaulbars embodied in his valuable "Materials for the Lower Amu-Darya" and "The History of Amu-Darya," for which he received another gold medal, from the Imperial Geographical Society. In 1877-78 he participated in the Russo-Turkish War and at its close was the Russian delegate on the Balkan Boundary Commission. Appointed Bulgarian Minister of War in 1882, he was recalled the following year. In 1892, having been ordered to organize a new cavalry division, he was given its command; in 1900 he was commander general in China and early in 1904 was Governor-General of the District of Odessa and then (November) received command of the third, and later of the second, Manchurian army. In the battle of Mukden he commanded the Russian right, and the turning of his position by Generals Oku and Nogi gave the Japanese the victory. (See RUSSO-JAPANESE WAR.) After he had resumed command in Odessa, Kaulbars's negligence was considered partly responsible for the massacre of the Jews in 1905. Some years later he won considerable notoriety by his undiminished anti-Semitism and protection of the "Black Hundred" organization (composed of members of the League of the Russian People). This partiality grew to such a scandal that in 1913 he was removed from his responsible post at Odessa.

KAULBARS, NIKOLAI, BARON (1842-1906). A Russian soldier, brother of Alexander Kaulbars. He was born in St. Petersburg and after studying military science there and in Berlin

became a member of the Russian general staff in 1868. He took part in the Russo-Turkish War (1877-78), represented his government when Bosnia and Herzegovina were occupied by the Austrians in 1878, and was a member of the Montenegrin Boundary Commission in 1879. From 1881 to 1886 he was military agent at Vienna and in the latter year was sent on a special diplomatic mission to Bulgaria. At the international geographical congresses in Vienna (1881) and Paris (1889) he represented Russia. He was appointed chief of the general staff of the Sixth Army Corps in 1889, with headquarters at Warsaw, and in 1899 was attached to the general staff at St. Petersburg. Besides attracting attention by a series of articles on military, historical, and scientific subjects—such, especially, as "Aperçu des travaux géographiques de la Russie, 1889"—Kaulbars was noted as a cartographer, having been the first to draw several important maps.

KAULEN, kou'len, FRANZ (1827-1907). A German Roman Catholic theologian. He was born at Düsseldorf, was educated at Bonn, and became a priest of the Roman Catholic church in 1850. In 1863 he was appointed a lecturer at Bonn, in 1880 professor, in 1892 papal domestic chaplain, and in 1903 a member of the Papal Bible Commission. He published *Die Sprachverwirrung zu Babel* (1861), *Geschichte der Vulgata* (1869), *Handbuch zur Vulgata* (1870), *Assyrien und Babylonien nach den neuesten Entdeckungen* (4th ed., 1891), and other works. He also finished the preparation, begun by Hergenröther, of the second edition of Wetzer and Welte's *Kirchenlexikon, oder Encyclopädie der katholischen Theologie und ihrer Hilfswissenschaften* (12 vols., Freiburg-im-Breisgau, 1882-1901), the chief German encyclopædia of the Roman Catholic church.

KAUN, koun, HUGO (1863-). A German composer, born in Berlin. He studied at the Hochschule under Grabau and Schulz and later at the music school of the Royal Academy under Kiel. From 1887 to 1900 he lived in Milwaukee, where he conducted various societies. In 1900 he settled permanently in Berlin. His works include two one-act operas, *Der Pietist* and *Oliver Brown*; three symphonies; the symphonic prologue *Maria Magdalena*; a symphonic poem, *Falstaff*; a concerto for piano and orchestra, considerable chamber music; several choral works with orchestra; numerous pieces for piano alone.

KAUNITZ, kou'nits, WENZEL ANTON DOMINIK, PRINCE (1711-94). An Austrian statesman. He was born at Vienna, Feb. 2, 1711; studied at Vienna, Leipzig, and Leyden; traveled in England, France, and Italy, and in 1735 was made an Imperial Councillor. He was employed on diplomatic missions to Rome, Florence, and Turin in 1741-42, was Austrian Minister at the court of Charles of Lorraine, Governor of the Austrian Netherlands in 1744-45, and in 1746 arranged with the French the stipulations for the withdrawal of the Austrian troops from Brussels and Antwerp. He took an important part as Imperial Ambassador in 1748 in the negotiations at Aix-la-Chapelle which closed the War of the Austrian Succession, and after the conclusion of peace became a member of the Privy Council, in which capacity he first conceived the plan of an alliance between Austria and France which established his great diplomatic reputation. He was Ambassador at Paris

from 1750 to 1753. In 1753 he became Chancellor and Minister of Foreign Affairs and in 1756 effected the Austro-French coalition against Frederick the Great. (See SEVEN YEARS' WAR.) Throughout the lifetime of Maria Theresa and with a steady decrease of influence under her sons, Joseph II and Leopold II, he continued at the head of foreign affairs. Though unsuccessful in his attempts to check the power of Prussia, he well represented Austria's interests in the first partition of Poland (1772) and in 1775 acquired Bukowina from the Turks. He took an active part in the reform measures of Joseph II, having already advocated in 1758 a reform of the complicated machinery of Austrian administration. As a statesman, he combined in an interesting way the older ideas of the eighteenth century statecraft with more modern conceptions, as, e.g., in his ideas on taxation and in his attitude on the revolt in the Netherlands when he advised Joseph II to consider their ancient privileges. Although somewhat eccentric in his personal habits and much ridiculed by the Viennese for his predilection for French fashions and manners, he was a liberal patron of the arts and sciences and a great admirer of French philosophy and literature, especially of Voltaire and the Encyclopædists. He retired from public life when Francis II ascended the throne (1792), and died June 27, 1794. Consult: Hormayer, *Oesterreichischer Plutarch* (Vienna, 1823); Béer, *Denkschriften des Fürsten Kaunitz* (ib., 1872); Schlitter, *Correspondance secrète entre le comte Kaunitz et le baron Ignatz de Koch* (Paris, 1899); id., *Kaunitz, Philipp Cobenzl und Spielmann* (Vienna, 1899); A. von Arneth, *Biographie des Fürsten Kaunitz* (ib., 1899), and the authorities cited under JOSEPH II, MARIA THERESA, and LEOPOLD II. See AUSTRIA-HUNGARY.

KAUPERT, kou'pért, GUSTAV (1819-97). A German sculptor, born at Cassel. He studied at the School of Arts and continued at the Munich Academy as the pupil of Schwanthaler. During his stay in Rome, whither he had gone with a government stipend, he received important orders from America and executed after Crawford's design all the accessory figures for the Washington Monument, also the colossal statue of America and the figures on the frontispiece of the Capitol in Washington. Besides a number of mythological and allegorical groups and statues, his original creations include the "Sleeping Lion" (1874), a monument to the Hessians fallen in battle, in the Karlsauë at Cassel; a marble group, in heroic size, of "Christ and the Four Evangelists" (1887), in the Basilica at Treves; and the statue of Emperor William I (1891), in the Römersaal at Frankfort, where he was professor at the Städel Institute (1867-92).

KAURI GUM. See KAURI PINE; DAMMAR.

KAURI (kou'rè) **PINE** (*Agathis australis*). A beautiful New Zealand coniferous tree, which sometimes attains a height of 150 feet, and which is noted for its dark, dense foliage. Although kauri is often called pine, it is not a pine at all. The genus *Agathis* is associated with *Araucaria* in constituting the coniferous tribe *Araucariaceæ*, which differs in many important particulars from the tribe *Abietineæ*, which includes the more common conifers of the north temperate regions, as pines, spruces, hemlocks, etc. A conspicuous superficial difference is that the

leaves of *Agathis* have broad blades, not needle-like, as in the pines. The timber of kauri is buff, close-grained, durable, flexible, very valuable for masts, yards, and planks, and for nearly all kinds of building and implements on account of its superiority to other timbers. It is much used for masts for the British navy. The Fiji Islands, New Hebrides, and Australia produce other species, the timber of which is sold under the name of kauri pine, although there are differences in quality. They all produce a resin called kauri resin, or kauri gum, and sometimes Australian copal and Australian dammar, of which large quantities are exported, chiefly from New Zealand. It is used for making varnishes. It is of a dull amber color and is sometimes found in pieces weighing 100 pounds by digging where kauri forests have formerly grown. When collected fresh from the trees, it is whitish. The industry of digging for kauri gum is a large one, employing many men, who go about thrusting a wire spear into the ground till they strike gum. See DAMMAR.

KAUTSKY, kout'ski, KARL JOHANN (1854-). An Austrian Socialist, born at Prague and educated at the Gymnasium and University of Vienna. After 1875 he was a contributor to the Socialist press, residing at various times in Zurich, Stuttgart, London, and, after 1897, in Berlin. One of the foremost exponents of the doctrines of Marx and Engels, in 1883 he founded in Stuttgart *Die neue Zeit*, a Socialist organ, which he thereafter edited. He wrote: *Einfluss der Volksvermehrung auf den Fortschritt der Gesellschaft* (1880); *Karl Marx' ökonomische Lehren* (14th ed., 1912); *Das Erfurter Programm* (11th ed., 1912, in Russian, 1903); *Der Parlamentarismus* (1893); *Geschichte des Sozialismus*, part i (1894); *Die Agrarfrage* (1890); *Handelspolitik und Sozialdemokratie* (1901; 2d ed., 1911); *Die soziale Revolution* (vol. i, *Sozialreform und soziale Revolution*, 1902, vol. ii, *Am Tage nach der sozialen Revolution*, 1903; 3d ed., 1911); *Thomas More und seine Utopie* (2d ed., 1907); *Der Ursprung des Christentums* (1908); *Vorläufer des neueren Sozialismus* (2d ed., 2 vols., 1909); *Vermehrung und Entwicklung in Natur und Gesellschaft* (1910). Many of his writings have been translated into English and some into French.

KAUTZ, kouts, ALBERT (1839-1907). An American naval officer, born at Georgetown, Ohio. He graduated at the Naval Academy in 1861. In June, 1861, as commander of a prize brig, he was captured near Cape Hatteras, but was released on parole and proceeded to Washington, where he succeeded in procuring the first exchange of prisoners authorized by President Lincoln. His services in the engagements on the lower Mississippi received commendatory notice, and at the close of the Civil War he was made lieutenant commander. In 1898 he was promoted to the rank of rear admiral and in 1901 was retired.

KAUTZ, AUGUST VALENTINE (1828-95). An American soldier, born at I-pringen, Baden. He came to the United States with his parents and, after serving as a volunteer in the Mexican War, was appointed to a vacancy in the Military Academy, where he graduated in 1852. For several years he served against the Indians and at the outbreak of the Civil War was made a captain in the Sixth United States Cavalry, with which he served through the Peninsular campaign of 1862. He continued as a cavalry offi-

cer, participating with distinction in many engagements, and in 1864 was placed in command of the cavalry division of the Army of the James. He was brevetted major general of volunteers in October, 1864, and in 1865 marched into Richmond in command of a division of colored troops. After the war he conducted successful operations against the Indians on the New Mexican frontier until 1874, when he was promoted colonel of the Eighth Infantry. In 1875 he was placed in command of the Department of Arizona. He was retired in 1892. General Kautz published *The Company Clerk* (1863); *Customs of Service for Non-Commissioned Officers and Soldiers* (1864); *Customs of Service for Officers* (1866).

KAUTZ, JULIUS (GYULA) (1829-1909). An Hungarian economist and statesman, born at Raab. He was educated there, at Pest, and at Leipzig, and was made instructor (1859), and then (1863) professor, of political economy in the University of Pest. In 1883 he became vice governor, and in 1892-1900 was governor, of the Austro-Hungarian Bank. He was made a Privy Councillor, served as member of the Hungarian Parliament (1865-83), and after 1886 was a life member of the Upper Chamber. In 1860 he was chosen a member of the Hungarian Academy of Science. His more important works in Hungarian are a system of economics and finance (last ed., 1890), and, in German, *Theorie und Geschichte der Nationalökonomik* (2 vols., 1858-60).

KAUTZSCH, KOUCH, EMIL FRIEDRICH (1841-1910). A German Hebrew scholar and biblical critic, born at Plauen (Saxony). He was educated at Leipzig, in whose theological faculty he was appointed privatdozent (1869) and professor (1871). Subsequently he held chairs at Basel (1872-80) and Tübingen (1880-88). In 1888 he received a professorship at Halle. He was one of the founders of the Palestine Exploration Society of Germany (1877) and from 1888 one of the editors of the *Theologische Studien und Kritiken*. He published *De Veteris Testamenti Locis a Paulo Apostolo Allegatis* (1869), *Grammatik des Biblisch-Aramäischen* (1884), *Heilige Schrift des alten Testaments* (3d ed., 1908-10), with other scholars; *Apokryphen und Pseudepigraphen des alten Testaments* (1900), with others. He edited Hagenbach's *Encyclopädie und Methodologie* (the 10th and 11th eds.); Gesenius' *Hebraische Grammatik* (from the 22d to the 28th ed., 1909); Scholz's *Abriß der hebraischen Laut- und Formenlehre* (thoroughly revised, 8th ed., 1899).

KAVA, ká'va. A South Sea Island shrub, *Piper methysticum*, with narcotic properties, and an opiate or intoxicating drink made from the root of the plant. See AVA.

KAVANAGH, KÁV'Á-NÁ. A prose romance by Henry W. Longfellow (1849).

KAVANAGH, HUBBARD HIND (1802-1884). An American bishop of the Methodist Episcopal Church South. He was born in Clark Co., Ky., and entered the ministry in 1823. In 1837 and 1838 he was Superintendent of Public Instruction in Kentucky. When the Methodist division occurred in 1844, he remained with the Church South, of which, in 1854, he was elected Bishop. The only Bishop of his church within the Federal lines during the Civil War, he gave evidence of great wisdom in a trying position. Consult A. N. Redford, *Life and Times of H. H. Kavanagh* (1884).

KAVANAGH, JULIA (1824-77). An Irish novelist. She was born at Thurles, Tipperary, and was the daughter of Morgan Peter Kavanagh, a minor poet and philologist. Her childhood was spent in France, where she was educated. In 1844 she took up her residence in London and entered literary life. Among her novels may be mentioned, *Madeleine, a Tale of Auvergne* (1848); *Nathalie* (1850); *Grace Lee* (1855); *Adèle* (1857); *Sybil's Second Love* (1867); *Bessie* (1872); *Two Loves* (1877). Her first work was entitled *The Three Paths, a Story for Youth* (1848), a posthumous work, *Forget-Me-Nots*, two volumes of short tales, appeared in 1878. Her novels, some of which have appeared in translations and in American editions, are notable for charm of style and poetic feeling. Consult C. W. Wood's preface to the 1878 edition of *Forget-Me-Nots*. Her plots are usually centred in France and, while of no great depth, are intelligent expositions of home life and domestic duties. She was a prolific contributor to periodical literature and also wrote many biographical sketches. Chief among her miscellaneous writings are *Woman in France during the Eighteenth Century* (1850), *Women of Christianity Exemplary for Acts of Piety and Charity* (1852), *A Summer and Winter in the Two Sicilies* (1858), *French Women of Letters* (1862), *English Women of Letters* (1862).

KAVELIN, KÁ-VE-LÉN', KONSTANTIN DMITRIEVITCH (1818-85). A Russian jurist and writer, born in St. Petersburg. He was educated at the Moscow University, where he became adjunct professor of civil law (1844-48), afterward taking the same position at the university of his native city, which he left in 1861 to teach in the Military Law Academy. As law tutor to the Grand Duke Nicholas and afterward legal adviser to the Finance Minister, Kavelin exerted considerable influence in obtaining freedom for the serfs. He made official sojourns in France and Germany to study the educational institutions of those countries, and he wrote much upon legal subjects. His scientific and literary activity was varied, including, besides history and law, political economy, the philosophy of history, ethics, psychology, and other subjects. His literary discussion of the agrarian question influenced the development of the radical reforms of Alexander II. His complete works were published in four volumes in 1859, but he wrote afterward *Problèmes de psychologie* (1872), *La philosophie de l'a priori* (1875), and *La question des paysans* (1882). These, with a biography, are included in the latest edition of his works (1897-1900).

KAVERY, KÁVÉR-I, or CAUVERY. A river of south India, rising in Coorg in the Ghats, within 30 miles of the west coast, at an altitude of 4000 feet. It flows southeast through Mysore and below the famous stronghold of Seringapatam forms the beautiful falls and rapids of Sivasamudram. Near Collegal it enters Madras and, proceeding past Bhavani, Erode, and Karur, at Trichinopoly and Srirangam divides into several deltaic channels, one of which near the centre continues as the Kavery eastward past Combaconum and into the Bay of Bengal at Karikal, another, on which are situated Tanjore and Tiruvalur, entering at Negapatam, and the principal and northernmost channel, the Coleroon, 92 miles long, debouching at Porto Novo. The Kavery is navigable only downward by small native craft. Its length is 415 miles.

The irrigation system of its delta, dating from the second century, is the most ancient in India.

KAVI, ká'vé (Skt., wise, poet). The ancient sacred language of Java (c.800-1400 A.D.). In structure this language belongs to the Malayo-Polynesian group, and its inflection is essentially Javanese. (See JAVANESE LANGUAGE.) There are three dialects of the Javanese—the vulgar tongue, the polite dialect, and the ancient—and they are written in alphabets which are adaptations of the Indian Devanagari script. The largest infusion of loan words is from Sanskrit. In the common language of Java the proportion of Sanskrit is only 11 per cent, but in the recondite it is nearly 40 per cent. The introduction of Indian elements is traced to the immigration of the Brahmans from India about 2000 years ago, who brought with them Hindu civilization and religion. Kavi holds the same relation to Javanese that Sanskrit does to the modern languages of India. Much of the literature is based on the Indian epic of the *Mahābhārata*, as, e.g., the *Bārata-yuddha* (partly translated in Raffles, *History of Java*, London, 1817), and the *Arjuna-Vivaha* (ed. by Friederich, Batavia, 1850; and by Kern, The Hague, 1871). In the fifteenth century the Kavi, with Hinduism, was driven from Java to the small island of Bali.

Bibliography. Humboldt, *Ueber die Kavi-Sprache* (Berlin, 1836-39); Friederich, *Voorloopig Verslag van het Eiland Bali* (Batavia, 1849-50); Stuart, *Kavi-Oorkonden* (Leyden, 1875); Jonker, *En Oud-javaansch Wetboek* (ib., 1885); Juynboll, *Drie Boeken Van het Oud-javaansche Mahābhārata* (ib., 1893). An exhaustive dictionary of the language has been prepared by H. N. van der Tuunk under the title *Kawibalineesch-nederlandsch woordenboek* (4 vols., Batavia, 1907-12).

KAW, ká, properly **KANSA**. A Siouan tribe speaking a dialect of the Osage language, formerly occupying several villages on the lower Kansas River in Kansas and estimated about a century ago at 1300. In 1846 they were removed to a reservation west of the Osage in the present Oklahoma. In 1875 they still numbered 516, but in 1910 there were but 238 remaining, less than half of whom were full-bloods. In former customs they resembled the other buffalo-hunting tribes of the plains.

KAWAIIISU, ká-wá'i-sōō. A Shoshonean tribe, living in Tehachapi mountains in southern California. See SHOSHONEAN STOCK.

KAWAMURA, ká'wá-mōō'rā, KAGEAKI, VISCOUNT (1850-). A Japanese soldier, born in Satsuma. He had considerable military experience in youth and had an important place in the expeditionary force sent to Formosa at the close of the Chino-Japanese War; for his services he was made Baron. Through the various military grades he was promoted to general in 1905, when he had been of great service in the Russo-Japanese War. At the head of the Army of the Yalu he held the extreme right of the Japanese line in the battle of Mukden. (See RUSSO-JAPANESE WAR.) He was afterward created Viscount. In July, 1906, he was appointed extraordinary inspector general of the army, and he became high military counselor and commander of the Tokyo garrison.

KAWERAU, ká'vēr-ou, GUSTAV (1847-). A German Protestant theologian, born at Bunzlau. After study at Berlin he held pastorates at Langheinersdorf and Klemzig, from

1886 to 1892 was professor of practical theology at Kiel, and in the latter year was appointed to a similar chair at Breslau. In 1883 he assisted in founding the Society for the Promotion of the Study of the History of the Reformation. He was made a member of the Consistory of Prussia at Berlin in 1907. He published: *Johann Agricola von Eisleben* (1881); *De Digamia Episcoporum* (1889); *Reformation und Gegenreformation* (1894; 3d ed., 1907), constituting vol. iii of Möller's *Lehrbuch der Kirchengeschichte*; *Predigten auf die Sonn- und Festtage des Kirchenjahres* (1899); *Paul Gerhardt* (1907); *Luther in katholischer Beleuchtung* (1911). He edited a number of works, especially treating of Luther, and became joint editor with Enders of *Briefwechsel Luthers* (vol. xi, 1907; vol. xv, 1913).

KAWIA, ká-we'á, or **CAHUILLA**, ká-we'yá, sometimes improperly spelt COAHUILLA. A Shoshonean tribe centring about Cahuilla creek and valley in southwestern California. They are a roving people of considerable strength and apparently primitive character, but, as they have never been under treaty restrictions, very little is known concerning them. They number 755. Consult A. L. Kroeber, *Shoshonean Dialects of California* (Berkeley, 1907).

KAY, JOHN (1742-1826). A Scottish miniature painter, etcher, and caricaturist, born near Dalkeith. He worked as a barber in Edinburgh until he was 43 years old. Then, encouraged by the favor with which his attempts at etching were received, he opened a print shop, where he painted miniatures and sold his etchings, sketches, and caricatures of Edinburgh celebrities and quaint characters. These were collected by Hugh Paton for illustration in his *A Series of Original Portraits and Caricature Etchings by the Late John Kay* (2 vols., 1838, with additional plates, 1877). Kay's portraits appeared at different Edinburgh exhibitions (1811-22), and some of his drawings can still be seen at the Royal Scottish Academy.

KAY, JOSEPH (1821-78). An English economist, born at Salford, Lancashire, brother of Sir James Phillips Kay-Shuttleworth. He graduated from Trinity College, Cambridge (B.A., 1845, M.A., 1849). As a result of his investigations of social conditions in Europe, made as a traveling bachelor of the university in 1845-49, he published *The Education of the Poor in England and Europe* (1846), *The Social Condition of the People in England and Europe* (2 vols., 1850), and *The Condition and Education of Poor Children in English and German Towns* (1853). He also wrote on *The Law Relating to Shipmasters and Seamen* (2 vols., 1875) and on *Free Trade in Land* (1879; 9th ed., 1885). Called to the bar at the Inner Temple in 1848, he was made queen's counsel and was elected a bencher in 1869, and from 1862 until his death he served as judge of the Salford Hundred Court of Record.

KAYAK, ká'ák (Eskimo name). An Eskimo canoe. It consists of a wooden framework, covered over with hide, but having a hole in the centre of the top covering for the man using it; this hole is surmounted with a flap which lashes around the body of the oarsman and prevents the entrance of water. See ESKIMO.

KAYE, ká, SIR JOHN WILLIAM (1814-76). An English military historian. He was born in Acton, near London, and was the son of a lawyer. After education at Eton and Addis-

combe, he went to India, and from 1832 to 1841 served in the Bengal Artillery, becoming lieutenant. He engaged in journalistic and literary work in India, and afterward in England from 1845 to 1856, when he received an appointment in the home department of the East India Company. The next year India came under the crown government, and he was nominated to the secretaryship of the Indian Political and Secret Service Department, made vacant by the retirement of John Stuart Mill. The leisure of his official life was employed in the writing and publication of numerous historical, biographical, and other works. His writings include: *History of the War in Afghanistan* (2 vols., 1851; later ed., 3 vols., 1874), *The Administration of the East India Company* (1853), *Christianity in India* (1859), *History of the Sepoy War* (3 vols., 1857-58, 5th ed., 1881), revised and republished as Kaye and Malletson's *History of the Indian Mutiny* (6 vols., 1890); *Lives of Indian Officers, Illustrative of the History of the Civil and Military Services in India* (2 vols., 1867; new ed., 1880); *Essays of an Optimist* (1870). He also edited Buckle's *Memoirs of the Services of the Bengal Artillery* (1852); Tucker's *Memoirs of India Government* (1853); *Autobiography of Miss Cornelia Knight, Lady Companion to the Princess Charlotte of Wales* (2 vols., 1861), and, with J. F. Watson, Taylor's *People of India* (1868). In 1871 he was created a Knight Commander of the Star of India. Three years later he resigned his appointment because of ill health.

KAY-SHUTTLEWORTH, SIR JAMES PHILLIPS (1804-77). An English educational reformer, founder of the English national system of elementary education. A brother of Joseph Kay, he was born at Rochdale, Lancashire, was a bank clerk for several years, and from 1824 to 1827 studied medicine at Edinburgh. He practiced at Manchester, devoting himself to sanitary reforms and to the advance of the Free Trade movement, and becoming assistant poor-law commissioner in 1835. In this way his attention was attracted to educational reforms; in 1841 he wrote a report on the training of the poor, having established a normal school at Battersea, largely from his own resources, in 1839. His plan was successful, and on it is based the English system of popular education. He was a member of the Central Relief Committee during the Lancashire famine at the time of the American Civil War and was prominent in the organization of the Liberals in his country. He wrote, among several pamphlets on education, *Four Periods of Public Education* (1862), and two novels, *Scarsdale* (1860) and *Ribblesdale* (1874).

KAZAN, or KASAN, ká-zān'. A government of European Russia, bounded by the Government of Vyatka on the north, Ufa and Samara on the east, Samara and Simbirsk on the south, and Nizhni Novgorod on the west (Map: Russia, G 3). Area, 24,587 square miles. The district is divided into three parts by the Volga and its tributary the Kama. In the north there are swamps and heavy forests; in the southeast, steppes; in the southwest, somewhat broken districts. During the springtime large areas are submerged by the rivers. Kazan is also traversed by the Vetluga and the Vyatka. The soil is generally good. The minerals are not important; but iron, petroleum, and sulphur are worked. The forests occupy over 30 per cent

of the area, and the arable land about 50 per cent. The chief industry is agriculture, including gardening and fruit raising, although certain lines of house industries, especially in wooden articles, are well developed. The chief manufacturing establishments are flour mills, distilleries, soap factories, tanneries, etc. Kazan contains a large number of river ports on the Volga and the Kama and carries on an extensive trade with Asiatic Russia. Pop., 1912, 2,792,400, composed of Russians, Tatars, and Tchuvashes. Most of the population belong to the Russian church. The Mohammedans number over 600,000, and there are a few thousand heathen. Capital, Kazan (q.v.). Up to the thirteenth century the present Government of Kazan formed a part of the dominions of the northern Bulgarians. Conquered by the Tatars in the thirteenth century, it was formed in 1438 into a separate khanate, which was, however, overthrown by the Russians in 1552.

KAZAN, or KASAN. Capital of the Russian government of the same name (q.v.), situated on the Kazanka, 195 miles east of Nizhni Novgorod (Map: Russia, G 3). At the north end of the city is situated the kremlin. It contains the sixteenth-century cathedral, a monastery, an orphan asylum as well as an arsenal, and the palace of the Governor. The town proper is divided into several quarters, of which two are inhabited by Tatars. The Kazanski convent, built in 1579, is a pilgrimage centre on account of a copy of the ikon of the Virgin Mother of Kazan, a miraculous picture, the original of which is now preserved in St. Petersburg and venerated throughout Russia. The city contains a handsome monument of Alexander II (1895) and the curious Sujumbeka Tower, a pyramidal brick structure of four tiers, 244 feet high, an object of veneration to the Moslems as the reputed burial place of one of their saints. Kazan possesses a large number of churches, monasteries, mosques, synagogues, and monuments. Among them is a truncated pyramid built in 1812-23 to commemorate the capture of the city in 1552. The University of Kazan, founded in 1804 by Alexander I, has four faculties and an attendance of 1200. There are attached to it an observatory, a botanical garden, an ethnographical museum, and a library of 235,000 volumes, including many Mongol and Tatar manuscripts. There are in Kazan, besides two theological seminaries, a teachers' seminary, a military school, and a theatre.

The manufacturing industries are of considerable importance. Leather (especially Russian leather), soap, textiles, iron and steel, and wooden articles are manufactured on an extensive scale. There is also some shipbuilding. Kazan is an important centre in the commerce between European and Asiatic Russia. The city possesses a stock exchange and electric railways, is the seat of an archbishop, and of many Mohammedan dignitaries, being the intellectual centre of the Russian Moslems. Pop., 1911, 188,100, including over 30,000 Tatars. The original town of Kazan was founded in the thirteenth century, about 30 miles northeast of the present town. It was destroyed by the Russians in 1399 and rebuilt on the present site by the Khan of the Golden Horde in 1437. It soon became the capital of the Tatar Khanate of Kazan. In 1552 the Russians under Ivan the Terrible took the town after a bloody siege, and its fall put an end to the khanate.

KAZANLIK, kâ-zân'lîk, or **KASANLIK**. A town of Eastern Rumelia, Bulgaria, situated on a tributary of the Tunja, at the base of the Balkan Mountains, and 5 miles south of the Shipka Pass (Map: Balkan Peninsula, E 3). It lies amid flower gardens; its chief industry is the manufacture of oil of roses, for which it is famous. During the Russo-Turkish War Kazanlik was an important centre of military operations and was occupied by the Russian forces on Jan. 7, 1878. Pop., 1900, 10,826, 1910, 10,568.

KAZEM'BE. See CAZEMBE.

KAZINCZY, kôz'int-sé, FERENCZ (1759-1831). An Hungarian author and editor, whose writings include plays, poems, travel sketches, and translations from various languages. He studied law, but followed literature as a profession, the first in Hungary to do so, and by earnest and persistent effort, producing original works and translating no slight amount from French, English, German, and the classical languages, he did much to restore the Magyar language and to stultify Latin, being the leader of the Neologists, or innovators of the Hungarian vocabulary. In 1794, having been implicated in the political conspiracy of Abbot Martinovics, he was brought to trial and sentenced to death, but he obtained a commutation and was imprisoned for six years. After his liberation in 1801 he was the leader of the contemporary Hungarian literary activity. His original works appeared in 1836-45 in five volumes. Kazinczy's *Correspondence*, published by the Hungarian Academy, is very important for the literary history of his time.

KAZVIN, or **KASVIN**. See **KASBIN**.

KEA. An island of the Cyclades. See **ZEÄ**.

KEA, kâ'a or kē'a. The kea, or mountain parrot, is large, about the size of a raven, and olive green, with the feathers edged with black, and a reddish tinge beneath the wings and on the tail which ends in a broad blackish band. It belongs to the South Island of New Zealand alone, where it is not found in the forests, but on the rocky mountain summits. It seeks its food in brushy places and nests among the crevices of the cliffs. Originally largely insectivorous, these parrots have acquired, since the settlement of New Zealand, a carnivorous taste which has made them a pest on all the more elevated sheep pastures. They used to come familiarly about the pens and slaughterhouses and became fond of picking the heads and offal thrown out. This liberal diet led to a great increase of parrots. It was next found that they attacked any sores the sheep might have, and from this learned to alight upon the sheep and with their pickaxe-like beaks tear down through the flesh of the loins until the kidneys were reached and devoured, apparently for the sake of their fat. In some districts the loss of sheep has been considerable, and in consequence these parrots have been actively destroyed. For a full account of the birds and the important economic problem which they present, consult Marriner, *The Kea, a New Zealand Problem* (Christchurch, N. Z., 1908).

KEACH, kēch, BENJAMIN (1640-1704). An English Baptist author. He was born at Stoke Hammond, joined the Baptists in 1655, became a preacher in 1659, suffered imprisonment for his opinions in 1664, removed to London in 1668, and there died as pastor of a large Baptist church. He was noted as a controversialist, but

is now of interest chiefly from the fact that he wrote several allegories, two of which, *The Travels of True Godliness* (1683; latest edition, with memorial by H. Malcolm, London, 1849) and its companion *The Progress of Sin, or the Travels of Ungodliness* (1684; latest edition, London, 1849), were very popular.

KEAN, kēn, CHARLES JOHN (1811-68). A noted English actor, the second son of Edmund Kean (q.v.). He was born at Waterford, Ireland, Jan. 18, 1811, and educated at Eton. He adopted the stage against his father's desire, making his début at Drury Lane in 1827 as Young Norval in Home's *Douglas*, but failed to capture the London public. In the provinces and in America, which he first visited in 1830, he was popular before he achieved a reputation in London. The only time when he played with his father in London, it is said, was at the latter's last appearance in 1833, when Charles was Iago to his father's Othello. Five years before they had appeared together at Glasgow in Arnold Payne's *Brutus*. He married in 1842 Miss Ellen Tree, and till his death in 1868 they acted together. His management of the Princess's Theatre (1850-59) was distinguished for the splendor of some of his productions, the most studious care being expended on scenery and dress. Byron's *Sardanapalus*, produced in 1853, was perhaps the most striking of these "restorations," as they were called. Kean was also director of the royal theatricals. His Hamlet was his greatest Shakespearean part. He was at his best in such pieces as *The Wife's Secret*, *The Corsican Brothers*, and especially in *Louis XI*. One of his latest undertakings was a tour around the world with his wife, upon which he started in 1863. He died at Chelsea, Jan. 22, 1868. Consult. Cole, *The Life and Theatrical Times of Charles Kean* (London, 1859); Cook, *Hours with the Players*, vol. II (ib., 1881); Hutton, "Mr. and Mrs. Charles Kean," in *Actors and Actresses of Great Britain and the United States*, edited by Matthews and Hutton, vol. IV (New York, 1886); Marston, *Our Recent Actors* (London, 1890); Scott, *The Drama of Yesterday and To-Day* (ib., 1899).

KEAN, EDMUND (1787-1833). A celebrated English tragedian. The facts of his parentage are not known with certainty. His mother was a strolling actress named Ann Carey, and his father is supposed to have been Edmund Kean, an architect's clerk, though some accounts say it was his brother Aaron, a stage carpenter. His childhood in London, where he was born March 17, 1787, was for the most part one of poor surroundings and many vicissitudes. Almost from babyhood he was brought upon the stage, the first time, it is said, as Cupid in a ballet. On one occasion he gave a recitation before George III at Windsor Castle. In 1803 he joined a strolling company and for 11 years continued his acting chiefly in provincial towns. In 1808 he married. His appearance as Shylock at Drury Lane was made in January, 1814, and in that season his name and fortune were assured. All London flocked to hear him; Hazlitt, Hunt, and Lamb, who were constantly in the pit, were extravagant in their praise, and Coleridge said: "Seeing him act was like reading Shakespeare by flashes of lightning." Yet it is curious to learn that he modified his Hamlet at the request of Mrs. Garrick, in order to do the part more "as David did." Kean made his first appearance in the United States in 1820 and

was received at first with great enthusiasm, but later, having with characteristic arrogance broken an engagement in Boston, he was severely censured and soon returned to England, where worse troubles awaited him. An action was brought against him in 1825 for criminal conversation with an alderman's wife, and he was condemned to pay damages. In consequence of this scandal he was hissed from the stage in London and Edinburgh. In the same year he came again to the United States, where the popular hostility was partly mitigated only by an apology for his conduct. At Quebec, however, he was much touched by an election from the Huron Indians as one of their chiefs. He reappeared at Drury Lane in 1827, but only occasionally rose to something of his old splendor. His health and spirits were completely broken by his habits of intoxication; he died at Richmond, May 15, 1833. Kean's disposition was generous, but ungovernable. His dramatic gifts were of a high order. He had an expressive face, with black hair and eyes, and, though small of stature, was of a most effective presence, and possessed a richly powerful voice. His greatest characters were Shylock, Othello, Richard III, Hamlet, and Sir Giles Overreach.

Bibliography. Phippen, *Authentic Memoirs of Edmund Kean* (London, 1814); Proctor (Barry Cornwall), *The Life of Edmund Kean* (Boston, 1835); Hawkins, *The Life of Edmund Kean* (London, 1869); Lewes, *On Actors and the Art of Acting* (ib., 1875); Baker, *Our Old Actors* (ib., 1881); Edwin Booth, "Edmund Kean," in *Actors and Actresses of Great Britain and the United States*, edited by Matthews and Hutton, vol. III (New York, 1886); Stirling, *Old Drury Lane* (London, 1887); Molloy, *The Life and Adventures of Edmund Kean, Tragedian, 1787-1833* (ib., 1897).

KEAN, ELLEN TREE (1805-80). An English actress, wife of Charles John Kean (qv.). She made her first appearance upon the stage at Covent Garden Theatre, London, in 1823 and soon established a high reputation in leading comedy parts. In 1836 she came to America, where she met with great success. After her marriage in 1842 she continued to act with her husband, and upon his death in 1868 she retired from the stage. She died Aug. 20, 1880. Consult Winter, in *Eminent Women of the Age* (Hartford, Conn., 1869).

KEANE, KEN, DORIS (1885-) An American actress, born in Michigan. She was educated at the American Academy of Dramatic Art, New York, and studied also in Chicago, Paris, and Rome. Her debut was made at the Garrick Theatre, New York, in 1903 as Rose in *Whitewashing Julia*. She starred with John Drew in *Delancy* (1904); played Rachel Neve in *The Hypocrites* in New York and London in 1907; and subsequently had important rôles in *The Happy Marriage* (1909), *Arène Lupin* (1909), *Decorating Clementine* (1910), *Anatol* (1912), and *Romance* (1913).

KEANE, JAMES JOHN (1857-). An American Roman Catholic archbishop. He was born at Joliet, Ill., and was educated at St. John's University, Minn., and at the Grand Seminary, Montreal, Canada. Ordained to the Roman Catholic priesthood in 1882, he was then assistant at St. Mary's Church and pastor of St. Joseph's Church at St. Paul, Minn., until 1885; served as professor and bursar (1886-88) and president (1888-92) of St. Thomas's Semi-

nary, St. Paul; and was pastor of the Church of the Immaculate Conception from 1892 to 1902. In the latter year he was consecrated Bishop of the diocese of Cheyenne, Wyo., and in 1911 he took charge of the archbishopric of Dubuque, Iowa.

KEANE, JOHN, first BARON (1781-1844). An Irish soldier. He was born at Belmont, County Waterford, Ireland, and was the son of Sir John Keane. He entered the army on a captain's commission in 1794, when but 13 years of age, and in 1799 served as aid-de-camp to Lord Cavan in the Egyptian campaign. After service in Gibraltar, Ireland, Bermuda, and at the taking of Martinique in 1809, he commanded a brigade through the Spanish Peninsular War and attained the rank of major general. In 1814 he was made a major general and placed in command of the expedition which landed at New Orleans and successfully resisted an American attack on his position. On the arrival of his superior officer, Sir Edward Pakenham, he continued to serve as brigade commander and was twice wounded. He was created K.C.B. in 1815. From 1823 to 1830 he was civil governor and commander in chief of the British forces in the West Indies and was made lieutenant general in 1830. In 1833 he succeeded Sir Colin Halkett as commander in chief at Bombay, and in 1839 commanded the advance into Afghanistan, the most brilliant exploit in which was the capture of the supposedly impregnable fortress of Ghuzni. For this service he was made G.C.B. and created Baron Keane of Ghuzni and Cappoquin, with a pension of £2000.

KEANE, JOHN JOSEPH (1839-). An American Roman Catholic archbishop. He was born at Ballyshannon, County Donegal, Ireland; came to America in 1846, and graduated at St. Charles's College and St. Mary's Seminary, Baltimore. As assistant pastor of St. Patrick's, Washington, D. C. (1866-78), he was prominent in the Catholic Young Men's National Union and in the Total Abstinence Union of North America. During his occupancy of the see of Richmond (1878-86) he established the Confraternity of the Holy Ghost. He was rector of the Catholic University of America from 1886 to 1897, was elevated to archiepiscopal dignity with the title of Archbishop of Damascus (1897), and after three years in Rome was transferred to the see of Dubuque, Iowa. He resigned in 1911 and was appointed titular Archbishop of Ciana. James John Keane succeeded him in 1911. He wrote on education, especially on the question of denominational schools; a selection from his writings, edited by M. F. Egan, appeared in 1902 as *Onward and Upward*. He was Dupleian lecturer at Harvard in 1890.

KEARNEY, KÄR'NI. A city and the county seat of Buffalo Co., Neb., 196 miles west by south of Omaha, on the Union Pacific and the Chicago, Burlington, and Quincy railroads (Map: Nebraska, E 4). A canal, 18 miles long and used incidentally for irrigation, furnishes 4500 horse power for the manufactures of the city. The industrial establishments include large flour mills, grain elevators, brickworks, alfalfa mills, a canning factory, cigar factories, a foundry and machine shops, and other works. The city has also extensive grain, stock, ice, alfalfa, and stock-feeding interests. Celery is raised extensively. Kearney has the State Industrial School for Boys, the Western State Normal School (with an enrollment of 1000), a

military academy, normal institute, public library, State hospital for tuberculosis, and a fine high school, city hall, courthouse, government building, and opera house. There are also three public parks, a bridge a mile long across the Platt River, and Lake Kearney, a beautiful sheet of water covering 40 acres. Across the river are the remains of old Fort Kearney, maintained by the government during and after the California gold rush to protect the overland traffic from Indian attacks. Settled in 1871, Kearney was incorporated as a village in the following year. The government is administered, under a charter of 1901, by a mayor elected every two years, and a council, which is elected by wards. The water works are owned by the city. Pop., 1900, 5634; 1910, 6202.

KEARNEY, DENIS (1847-1907). An American labor agitator, the leader of the movement known as Kearneyism in California. He was born in Oakmont, Ireland, went to sea as a cabin boy at the age of 11, and in 1872 settled in San Francisco, Cal., where he obtained employment as foreman of a gang of stevedores and soon afterward went into the draying business on his own account. In 1877 he began to incite the laboring men of San Francisco against the wealthier classes and soon gained almost complete ascendancy over the mass of them. Great meetings were held on the Sand Lots near the city, where Kearney ruled supreme, soon attracting general attention by his savage attacks upon capital, Chinese labor, and various alleged grievances. His influence rapidly increased, until his adherents were strong enough to pack a constitutional convention and force the adoption of a new State constitution in 1879, which was largely in their own interest and was most detrimental to capital and vested interests generally. In the summer of 1878 Kearney visited the Eastern States and delivered incendiary and intemperate speeches in the larger cities. He did not succeed in winning many new adherents, however, and returned to California, where his old following gradually drew away from him, and he himself soon relapsed into insignificance. Consult the chapter "Kearneyism in California," in James Bryce, *American Commonwealth*, vol. ii (New York, 1910).

KEARNY. A town in Hudson Co., N. J., on the Passaic River and on the Erie Railroad (Map: New Jersey, D 2). It is a residential suburb of Newark and New York and has a State soldiers' home, a Roman Catholic protectory, a Carnegie library, and an Italian orphan asylum. There are important manufactures of linoleum, cotton and linen thread, roofing material, white metal, brass novelties, celluloid, dyestuffs, fertilizers, lamps, and buttons. The government, under a charter of 1895, is vested in a town council, which includes one member elected at large for a term of two years, who is the mayor. Kearny was originally a part of some land ceded by Gov. Philip Carteret in 1668 to Capt. W. Sanford, who called it New Barbadoe. The township of Kearny was created in 1867 and named after Gen. Philip Kearny. Pop., 1900, 10,896; 1910, 18,659. 1914 (U. S. est.), 21,967.

KEARNY, LAWRENCE (1789-1868). An American naval officer, born at Perth Amboy, N. J. He entered the navy as a midshipman in 1807 and during the War of 1812 took part in several daring exploits. He was one of the officers sent to the Gulf of Mexico and the Caribbean Sea in 1821 to stamp out piracy in those

waters and in 1823 was one of the commanders in Capt. David Porter's mosquito fleet, which completed this work. Three years later, as commander of the *Warren*, he performed a similar service for the Levant. He was commissioned captain in 1832 and in 1841 was appointed to the command of the East India squadron. During his stay on this station he began negotiations with the Chinese government which resulted in the signing of a commercial treaty between China and the United States in 1845. In 1843, while on his return to America, he stopped at the Hawaiian Islands and protested against the provisional cession to Great Britain which the King had been coerced into signing by Lord George Paulet. He was made a commodore, and was retired in 1867.

KEARNY, PHILIP (1815-62). An American soldier, prominent in the Mexican and Civil wars, the nephew of Gen. Stephen W. Kearny. He was born in New York City, graduated at Columbia in 1833, and subsequently studied law under Peter A. Jay. In 1837 he entered the United States army as lieutenant in the First Dragoons, and two years later was one of three officers sent by the United States government to study the French cavalry service. He spent several months in the cavalry school at Saumur, and then, having secured a leave of absence, volunteered with the First Chasseurs d'Afrique and served with conspicuous gallantry in the Algerian War. Late in 1840 he returned to the United States. He was then successively aid-de-camp to General Macomb, general in chief of the United States army, from 1840 to 1841, and to General Scott, the successor of General Macomb, from 1841 to 1844, and subsequently served under his uncle in the West. In April, 1846, he resigned from the army, but almost immediately reenlisted for service in the Mexican War and became captain of the company which was chosen as the bodyguard of General Scott. In December of this year he was promoted captain. He earned a brevet of major at Contreras and Churubusco and towards the close of the latter engagement made a gallant charge into Mexico City, but received a wound which necessitated the amputation of an arm. In 1851 he participated in a campaign against the Rogue River Indians, but again resigned in October of this year and spent several years in Europe. In 1859 he entered the French army as a volunteer aid to General Maurier; served in the Italian War, participating in the battles of Magenta and Solferino; and for his conspicuous bravery throughout the campaign he received the cross of the Legion of Honor. At the outbreak of the Civil War he returned to the United States and in May, 1861, was appointed brigadier general. He commanded for some time the First New Jersey Brigade and in May, 1862, was placed in command of the cavalry of the Army of the Potomac. He served with great efficiency and gallantry throughout the Peninsular campaign, attracting particular attention at the battles of Williamsburg and Seven Pines, and in July, 1862, was commissioned major general of volunteers. He subsequently participated in the second battle of Bull Run and on Sept. 1, 1862, was killed while reconnoitring at Chantilly. Consult: De Peyster, *Personal and Military History of Philip Kearny* (New York, 1869); an account by Kearny himself of his service in Algiers, published under the title *Service with the French*

Troops in Africa (ib., 1844?); and his "Letters from the Field," in the *Historical Magazine* (2d series, Morrisania, N. Y., 1870).

KEARNY, STEPHEN WATTS (1794-1848). An American soldier, born at Newark, N. J. He was appointed a lieutenant in the Thirteenth Infantry in 1812 and was captured by the British, who held him a prisoner for several months. In 1840 he was made a brigadier general and given command of the Army of the West, with which he conquered New Mexico. He then entered California, where he found Stockton (q.v.) and Frémont (q.v.) already in possession, but, disregarding their claims, assumed the office of Governor in 1847, in pursuance of instructions given him by the Secretary of War to establish a civil government in the conquered country. He held the office, however, only from the 1st of March until June, when he was ordered to Mexico, and in 1848 was made Governor of Vera Cruz and later of Mexico City, where he contracted the fever of which he died. He returned to the United States in 1848, with the rank of major general. He wrote a *Manual for the Exercise and Manœuvring of United States Dragoons* (1837) and *Organic Law and Laws of the Government of the Territory of New Mexico* (1846).

KEARSARGE, kēr'sārj, MOUNT. A mountain in Carroll Co., N. H., 2943 feet high, belonging to the White Mountain group (Map New Hampshire, H 4). It was in honor of this mountain that the vessel was named which sank the Confederate cruiser *Alabama* in 1864. Another mountain, situated in Merrimac Co., N. H., is known by the same name. The latter was formerly known as *Kear's Arg*, which was easily changed to Kearsarge. Its Indian name was Cowissewaschook.

KEARY, kē'ri, ANNIE (1825-79). An English novelist, born in Yorkshire. She first wrote tales for children, the best of which are *Little Wanderlin* and *Sidney Grey*. Her more mature novel writing, chiefly concerned with domestic life, was varied by the production of two works, *Early Egyptian History* (1861) and *The Nations Around* (1870), an account of the peoples bordering upon Israel, which showed considerable ability in a different line. Among her other books are: *The Heroes of Asgard* (1857); *Janet's Home* (1863); *Clemency Franklyn* (1866); *Oldbury* (1869); *Castle Daly* (1875); *A Doubting Heart* (1879). *Castle Daly*, an Irish story, the best and most popular of her novels, is a discriminating study of the strong and weak points of the Saxon and Celtic natures.

KEASBEY, kēz'bī, LINDLEY MILLER (1867-). An American economist, born at Newark, N. J. He graduated at Harvard in 1888, took his Ph.D. at Columbia in 1890, and studied also at Strassburg. In 1892 he was appointed professor of political science at the University of Colorado, in 1894 professor of economics and politics at Bryn Mawr, in 1905 professor of political science at the University of Texas, where he was transferred to the chair of institutional history in 1911. He wrote *The Nicaragua Canal and the Monroe Doctrine* (1896), various contributions to reviews, and a translation from Loria, *The Economic Foundations of Society* (1899).

KEATING, JOHN M. (1852-93). An American physician, born in Philadelphia. He was educated at Seton Hall College and at the University of Pennsylvania, traveled extensively in

the East, was lecturer on the diseases of children at the University of Pennsylvania for a time, and afterward became professor of the principles and practice of medicine in the Woman's Medical College, Philadelphia. He edited the *Cyclopædia of the Diseases of Children* and *The Climatologist*, and published: *With General Grant in the East* (1880), *The Mother's Guide in the Management and Feeding of Infants* (1881); *Maternity, Infancy, and Childhood*; *Mother and Child*; and several other works.

KEATS, GWENDOLINE (pen name, ZACK) (?-1910). An English novelist, born in Devonshire. After publishing several short dialect stories in *Blackwood's Magazine*, she came before a wider public with *Life is Life* (1898), a series of 12 tales, displaying great power in depicting the hard side of life. They were succeeded in a similar vein by *On Trial* (1899), which won the prize of the London Academy; *The White Cottage* (1901); *Tales of Dunstable Weir* (1901), *The Roman Road* (1903).

KEATS, JOHN (1795-1821). An English poet, born in London, Oct. 29 or 31, 1795. When about eight years old, he was sent to the school kept by John Clarke at Enfield. Here he formed a friendship with the master's son, Charles Cowden Clarke, learned Latin, possibly French, and read eagerly, especially in Greek mythology. The Greek language, however, he never learned; most of his early notions of Greece he got from the *Classical Dictionary* of Lemprière. His father, a livery-stable keeper, died in 1804; and his mother, who had married William Rawlings, another stable keeper, soon left him and went to live with her well-to-do mother in Edmonton, where she died in 1810. At school Keats was not a very studious youth, but he was admired for his nobility of character and his courage; he was quick-tempered, but quick to forgive, pugnacious, and fond of sports. His personal beauty was striking. On his mother's death Keats was taken from school by his guardians and apprenticed for five years to a surgeon at Edmonton. Of this period we know little save that one day a comrade read him Spenser's *Epithalamium* and lent him the *Faerie Queene*. This was a revelation. Keats had found his way. He was entranced by Spenser's world of romance and forthwith set himself to writing verse in imitation of his master. At this time he also fell under the influence of Gray and Moore. In 1814 he quarreled with the surgeon to whom he had been apprenticed and went to London, where he continued his studies, for which, however, he had no real liking, at Guy's and St. Thomas's hospitals.

Keats soon made the acquaintance of Leigh Hunt, Shelley, and others, and in 1817 of the painter Haydon, all of whom exerted a powerful influence upon him. With Hunt he lived for a time. His first published poem, the sonnet beginning "O Solitude, if I with thee must dwell," appeared in Leigh Hunt's *Examiner* (May 5, 1816). It was followed on December 1 by the great sonnet "On First Looking into Chapman's Homer," which Hunt accompanied with observations on its author and the new school of poetry. Four other sonnets speedily followed. In March, 1817, appeared *Poems by John Keats*, dedicated to Hunt. The volume fell flat, for every one was at that time under the sway of Moore, Scott, and Byron. Keats at once began *Endymion*, which was published in

1818. This year he made a tour through the English Lake district and Scotland, where he contracted the throat trouble which ultimately developed into consumption. Just after his return to England appeared the famous attacks on *Endymion* (*Blackwood's Magazine*, August, 1818; and the *Quarterly Review*, dated April, 1818, but published in September). Whether or not Keats's critical foe was Lockhart, he had fervent defenders in Shelley, who in his *Adonais* calls his friend's assailants assassins, and in Byron, who devoted to Keats a strophe in *Don Juan*. Keats continued to write, though failing health and his passion for Fanny Brawne, a girl with whom he had fallen in love several years earlier, were not conducive to sustained work. In 1820 appeared his third volume, *Lamia and Other Poems*. He died in Rome, Feb. 23, 1821, and was buried there near Shelley, by the pyramid of Caius Cestius. Keats did not live to produce much, as compared with the work of the famous poets who were his contemporaries. The affectations which marred his first two volumes naturally led to severe criticism. The third volume contained poetry of the most exquisite quality. There may be greater lyric poetry than that of his odes, but none is lovelier. "On a Grecian Urn," "To a Nightingale," and "To Autumn" are above all critical deduction or detraction. In "Isabel," "The Eve of St Agnes," and "La belle dame sans Merci" he captured the very spirit of mediæval romance. His longer poems, of an excellence uneven and far from sustained, are still noble creations of the poetic imagination and rich in passages of the rarest beauty. Thanks to the perfection of a group of his shorter poems, to the deathless phrases sown through his work, and to the magic of his exquisite natural imagery, he became the poet's poet. His influence upon the three generations of poets that have followed him has been greater than that of Shelley. The marks of it are plain in the poetry of Tennyson, Rossetti, Swinburne, and Morris, and at moments even in that of Browning. Since his death his fame has increased more and more, and a high place by the side of Shelley is assured him.

Bibliography. Monckton Milnes, *Life, Letters, and Literary Remains of Keats* (London, 1848; rev., 1867), the standard biography, based on materials gathered by the author from Keats's friends and relatives; J. R. Lowell (ed.), *Poetical Works of Keats, with Life* (Boston, 1854; rev., 1873); H. B. Forman (ed.), *Works* (4 vols., London, 1883; rev., 1889; 1 vol., New York, 1910); H. E. Scudder (ed.), *Works* (Cambridge ed., Boston, 1899); W. M. Rossetti (ed.), *Poetical Works of Keats, with a Memoir* (London, 1887); Sidney Colvin, *Keats*, in "English Men of Letters Series" (New York, 1887); id. (ed.), *Letters of Keats* (ib., 1891); Hoops, *Keats' Jugend und Jugendgedichte* (Leipzig, 1895); Marie Gotheim, *John Keats' Leben und Werke* (Halle, 1897); Texte, *Keats et le néo-hellénisme dans la poésie européenne* (Paris, 1898); H. C. Shelley, *Keats and his Circle* (New York, 1902); R. W. Johnson, *Keats-Shelley Memorial in Rome: An International Project* (ib., 1904); A. E. Hancock, *John Keats* (Boston, 1908); Lucien Wolff, *John Keats, sa vie et son œuvre* (Paris, 1909); J. W. Mackail, "Keats," in his *Lectures on Poetry* (London, 1911); John Keats, *The Keats Letters, Papers, and other Relics*, reproduced in facsimile, edited by J. C.

Williamson (New York, 1914). Keats-Shelley Memorial, Rome, *Bulletins* (Rome, 1910-), No. 1, contains a bibliography.

KEB. See SER.

KEBLAH. See KIBLAH.

KEBLE, JOHN (1792-1866). An English divine and poet. He was born at Fairford in Gloucestershire and at the age of 15 won a scholarship at Corpus Christi College, Oxford. After winning the distinction of a double first, he was elected fellow of Oriel, which brought him into the most distinguished intellectual society in the university. In 1812 he also won both the English and Latin prize essays. He was ordained deacon in 1815 and priest in 1816. Neither the prospect of emolument at Oxford nor the attractions of the Oriel common room, of which Whately and Copleston were then members and to which Arnold, Newman, and Pusey were soon to be added, could tempt him from the career he had chosen, that of a parish priest. He took duty in Fairford, Gloucestershire, occasionally receiving pupils, among whom were Robert Wilberforce, Isaac Williams, and Hurrell Froude. From 1836, when he accepted the living of Hursley, near Winchester, his life was spent mostly in this small country parish, devoted faithfully to its simple duties, though he exerted great influence throughout England by a vast correspondence. Quiet and retiring as he was, he is yet considered, on Newman's testimony, as the real author of the Oxford movement, to which he is held to have given the impulse by his sermon on "National Apostasy," preached at Oxford in 1833. His important contributions to the literature of the movement were his share in the translations of the *Library of the Fathers* and in the *Tracts for the Times*, of which he wrote seven, besides being ultimately associated in counsel with the other authors. His churchmanship was, however, always marked by a sober attachment to Anglican traditions, and he was deeply grieved by Newman's secession, in which he never dreamed of following him. His Christian churchmanship was expressed in *The Christian Year*, a volume of verse which he published anonymously in 1827 and which had a remarkable success and influence, not equaled by that of his later volume, *Lyra Innocentium* (1846). A *Concordance to the Christian Year* was published in 1871 in New York. He was professor of poetry at Oxford from 1831 to 1841, and his lectures were edited by Francis (Oxford, 1910). He died at Bourne-mouth, March 29, 1866. Keble College (q.v.) was founded in Oxford University as a memorial to him.

Bibliography. J. T. Coleridge, *Life of John Keble* (2d ed., 2 vols., New York, 1869); C. M. Yonge, *Musings on the Christian Year and Lyra Innocentium* (Oxford, 1872); A. H. Japp, *Golden Lives: Biographies for the Day* (London, 1873); J. C. Shairp, *Studies in Poetry and Philosophy* (3d ed., Edinburgh, 1876); Walter Lock, *Life of Keble* (London, 1894); A. B. Donaldson, *Five Great Oxford Leaders* (ib., 1900); Henri Brémond, *Ames religieuses* (Paris, 1902); J. H. Newman, *Apologia pro Vita Sua* (New York, 1905); E. F. Wood, *John Keble* (Milwaukee, 1910).

KEBLE COLLEGE. A college of Oxford University. It was founded in 1870 by subscription in memory of the Rev. John Keble, vicar of Hursley, sometime fellow and tutor of Oriel College, professor of poetry in the univer-

sity, and the author of *The Christian Year*. It was authorized by a statute of the university, passed in 1871, regarding new foundations, and was intended to provide economical living for students and Christian training based on Church of England principles. The college is governed by a warden and a council of from 9 to 12 members, the whole charge of education and discipline being lodged in the hands of the warden. The establishment is large, consisting of a warden, a subwarden, a bursar, 10 tutors, a precentor, 25 scholars and exhibitors, with, in all, about 250 undergraduates. The buildings, built of brick, a unique feature in Oxford architecture, are extensive. The chapel is especially noteworthy, among its treasures being Holman Hunt's picture, the "Light of the World." The college presents to 33 livings, most of them of considerable importance.

KEBLER, LYMAN FREDERIC (1863-). An American chemist, born at Lodi, Mich. He was educated at the University of Michigan (Ph.C., 1890; M.S., 1892), Jefferson Medical College (1898), Temple University, Philadelphia (1899-1903), and George Washington University (M.D., 1906). He was an instructor in chemistry at Iowa State College (1888-89), at Michigan (1891-92), and later assistant professor of pharmacology and materia medica at Georgetown College. He served as chief chemist for manufacturing chemists in Philadelphia from 1892 to 1903 and was then engaged by the Bureau of Chemistry of the United States Department of Agriculture, first as chief of the drug laboratory and after 1907 as chief of the chemistry division. His scientific contributions and bulletins are chiefly on the subject of habit forming and other harmful drugs.

KECHUA, kěch'wā. A South American Indian stock. See QUICHUA.

KECSKEMÉT, kěch'kě-māt. A city in the County of Pest, Hungary, situated in an agricultural district 65 miles by rail south-southeast of Budapest (Map: Hungary, F 3). It is a scattered town, with a number of churches, two cloisters, a city hall, and cavalry barracks. Grain, tobacco, and fruit (principally apricots and apples) are cultivated, and cattle and poultry are raised. Wine is produced, and manufactures of flour and bricks are carried on. The city is well known for its annual cattle fair. Educational institutions include a law school, a vintner's school, and an agricultural school. Pop., 1900, 57,812; 1910, 66,834, mostly Roman Catholic Magyars. The city was badly damaged by an earthquake in 1911.

KE'DAH, or KĪ'DAH. A native state on the western side of the Malay Peninsula, having an area of some 3800 square miles (Map: Burma, D 5). It is ruled by a native sultan, but is under British protection. The state is well administered, roads are being built, and a branch of the Federated Malay States railroad system connects the capital, Alor Star, with the outside world. Large quantities of rice, rubber, and tapioca are produced. There is an active trade with the Straits Settlements. Pop., 1911, 245,986.

KEDAR'S (kē'darz) **TENTS**. An expression denoting uncongenial surroundings, derived from Psalm cxx. 5.

KEDGE (perhaps connected with dialectic Swed. *keka*, to tug). A small anchor. It is used for various purposes, such as hauling the stern of a ship to one side or the other or haul-

ing a ship from one part of the harbor to another. See ANCHOR.

KED'ZIE, ROBERT CLARK (1823-1902). An American chemist. He was born at Delhi, N. Y., graduated from Oberlin College in 1847, and studied medicine at the University of Michigan. He served as a surgeon in the army at the outbreak of the Civil War and was for a time engaged in private practice of medicine. In 1863 he was elected to the chair of chemistry in the Michigan Agricultural College. As president of the State Board of Health, he paid special attention to arsenical wall papers and invented an oil tester for the detection of inferior and dangerous grades of oil. But his most valuable service was to agricultural chemistry.

KEE'BLE, SAMUEL EDWARD (1853-). An English Wesleyan clergyman, born in London, where he was educated. After receiving his ministerial training at Didsbury College, he entered the ministry of the Wesleyan Methodist church in 1876. In 1908 he became a member of the Legal Hundred, and he founded and served as president of the Wesleyan Union for Social Service. He is the author of *Industrial Day Dreams* (1896); *Christianity and our Wages System* (1905); *A. B. C. Annotated Bibliography on Social Questions* (1907); *The Ideal of the Material Life* (1908); *A Legal Minimum Wage* (1912). He also edited *The Citizen of Tomorrow* (1906), *Social Science and Service* (1909); *Social Teaching of the Bible* (1909), *Wounds of the World* (1913).

KEEFE, DANIEL J. (1855-). An American labor leader. He was born at South Chicago, Ill. When he was eight years old, he began work in a shingle mill, and later he became a lumber handler and longshoreman. In 1882 he was president of the Lumber Unloaders' Association and after 1893, except for two years, was president of the International Longshoremen, Marine, and Transport Workers' Association. He served also as one of the members of the first executive committee of the National Civic Federation, as a vice president for a time of the American Federation of Labor, and in 1906 as member of the Industrial Peace Commission, Washington. From 1908 to 1913 he was Commissioner General of Immigration of the United States.

KEE'FER, GEORGE ALEXANDER (1836-1912). A Canadian civil engineer. He was born at Cornwall, Ontario, and was educated at Upper Canada College, Toronto. He was first employed on surveys connected with the Grand Trunk Railway, and later made the first exploration for a direct line of railway between Ottawa and Toronto, which is now the Canadian Pacific Railway route. In 1872 he entered government service, doing important survey and civil engineering work in British Columbia until 1886. He constructed one of the heaviest sections of the Canadian Pacific Railway in the Fraser River cañons and afterward built the water works of the city of Vancouver. In 1900 he became resident engineer of Dominion Public Works in British Columbia. When Russian engineers examined the Canadian Pacific previous to beginning the Trans-Siberian Railway, they offered the construction of the latter's terminal section at Vladivostok to a Canadian syndicate, and Keefer was employed to examine and report upon the proposed route between Vladivostok and the Amur River.

KEEFER, SAMUEL (1811-96). A Canadian

civil engineer. He was born at Thorold, Ontario, and after an education for the profession of civil engineer obtained government employment in the Province of Quebec and in 1841-53 was chief engineer of the Board of Public Works. Besides the regular work of responsible positions in connection with the Grand Trunk Railway, he was Deputy Commissioner of Public Works and an official inspector of Canadian railways. He was among the first to urge the construction of the Sault Ste. Marie Canal, made a survey for that purpose in 1852, and took part in building the first suspension bridge at Niagara Falls, which was completed in 1869. For this he was awarded a diploma and gold medal at the Paris Exposition of 1878. In 1872 he made a survey for the Baie Verte Canal. In 1857 he became resident engineer of the Grand Trunk Railway and had charge of the division between Montreal and Kingston. In 1880 the Conservative government of Sir John A. Macdonald made him a member of the commission to inquire into the condition and progress of the Canadian Pacific Railway, the construction of which was then being pushed. The commission's report in 1882 was so satisfactory that further parliamentary inquiry was prevented.

KEEFER, THOMAS COLTRIN (1821-1914). A Canadian civil engineer. He was born at Thorold, Ontario, and was educated at Upper Canada College, Toronto. He was first employed on the Erie Canal and afterward on the Welland Canal (1841), where he remained until 1845, when he was placed in charge of the Ottawa River works. In 1850 he was employed by the government to make a survey of the rapids of the St. Lawrence and to explore the region between the St. Lawrence and the headwaters of the St. John for the purpose of establishing intercolonial communication by canal or railway. Subsequently he made surveys for the Grand Trunk Railway, and he prepared the report and plans which resulted in the building of the Victoria Bridge across the St. Lawrence at Montreal. He served as a commissioner from Canada at the international exhibitions in London in 1851 and in 1862 and in Paris in 1878. In the latter year he was created C.M.G. In 1869-70 he published a series of letters advocating the construction of the Canadian Pacific Railway. He was appointed to determine upon the practicability of a ship canal between the Great Lakes and the Atlantic and on this question published a monograph in 1894. Keefer brought about the change on Canadian railways from the narrow gauge to the standard gauge. In 1887 he was president of the Canadian, and in 1888 president of the American Society of Civil Engineers and in 1898-99 president of the Royal Society of Canada. His publications include: *Philosophy of Railways* (1849); *The Influence of the Canals of Canada on her Agriculture* (1850); *Report on the Victoria Bridge* (1853); *Canadian Waterways from the Great Lakes to the Atlantic* (1893).

KEEL (Icel. *kjöl*, Dan. *kjøl*, Swed. *köl*, keel). In wooden ships the keel is a construction of rectangular section made up of timbers scarfed and bolted together; it is the first part of the ship to be laid upon the building blocks, hence the term "laying of the keel" is synonymous with beginning the actual construction of a ship. It extends from the sternpost (or rudder-post in wood-built single-screw steamers) to the

gripe and apron. In iron and steel steamers the keel consists of the vertical keel plates and the flat keel plates, the latter being usually referred to as the keel. The vertical keel is internal and in vessels having double bottoms extends from the bottom plating or flat keel to the inner bottom. Iron and steel sailing ships and some steamers have external bar or hollow keels. In all kinds of vessels the keel is one of the principal longitudinal ties holding the ship together and stiffening her in the direction of her length. To reduce the angle of roll in modern men-of-war, *bilge keels* are fitted. These consist of plating extending longitudinally like an external keel, but at the turn of the bilge, for about three-fifths the length amidships. The section of this keel is usually that of a very acute isosceles triangle with its base against the ship's bottom, the sides consist of plating, and the space inside is ordinarily filled with wood. (See *BILGE*) Instead of using bilge keels, merchant vessels are usually steadied by keeping their *righting moment* (see *SHIPBUILDING*) fairly weak by means of arrangements of cargo and water ballast. A *false keel* is a facing of timber spiked to the main keel to protect it. *Docking keels* are side keels occasionally placed on ships (especially heavily armored ones) for convenience in docking. They receive the upward thrust of bilge shores and distribute it along the bottom so that there is no danger of warping in the bottom plating or warping or "hogging" frames. *Keel blocks* are the short built-up piles of timber on which the keel of a ship rests in building or when in a dry-dock.

KEELER, JAMES EDWARD (1857-1900). An American astronomer, born at La Salle, Ill., and educated at Johns Hopkins University, from which he graduated in 1881. He took part in the solar eclipse expedition to Colorado (1878) and four years afterward in the Mount Whitney expedition. After a year at the Allegheny (Pa.) Observatory he went to Germany and studied under Quincke in Heidelberg and von Helmholtz in Berlin. He was appointed assistant in the Lick Observatory in 1886 and two years later became its astronomer. In 1898 he succeeded Holden as director of the Lick Observatory after nine years at the head of the Allegheny Observatory. Keeler's greatest work was in spectroscopy, his most notable achievements in this field being the accurate determination of the wave length of the fundamental green ray of the nebular spectrum and the demonstration, by means of the spectroscope, of the truth of Maxwell's theory regarding the meteoric constitution of the rings of Saturn. He wrote *Spectroscopic Observations of Nebulae* (1894) and many contributions to the *Astrophysical Journal*, of which he was coeditor, and to the *Memoirs of the Royal Astronomical Society*.

KEELEY, LESLIE (1836-1900). An American physician, originator of the Keeley Cure. He was born in St. Lawrence Co., N. Y., graduated at the Rush Medical College, Chicago, in 1863, and later entered the Federal army as a surgeon. At the close of the war he removed to Dwight, Ill., where he began the practice of his profession. Here in 1880 he opened a sanatorium for persons addicted to the immoderate use of alcohol and opium. His cure consisted of a secret preparation, which he said contained bichloride of gold; and such was his success that

similar sanatoriums in other parts of the country Dr. Keeley claimed that, when his medicine was administered according to his directions, it had no injurious effects and that 95 per cent of the patients treated were permanently cured. Besides his *The Morphine Eater*, or *From Bondage to Freedom* (1881), he published numerous articles in the periodical press.

KEELEY, MRS. MARY ANNE (1805 or 1806-99). An English comic actress, the wife of Robert Keeley (q.v.). Born in Ipswich, she made her appearance as Miss Goward (her maiden name) in Dublin in 1823. In 1825 she went to London, soon becoming a member of the company at Covent Garden, with Mr Keeley, to whom she was married in 1829. Among the parts in which she won her great popularity were *Nerissa* in *The Merchant of Venice* (1830), *Smikey* in *Nicholas Nickleby* (1837), Jack Sheppard (1838), *Sairey Gamp* (1844), and *Betty Martin* (1855). In 1836-37 the Keeleys visited America with great success. From 1844 to 1847 they managed the Lyceum, where their production of *The Cricket on the Hearth* ran for over a year. The last 40 years of her life were passed chiefly in retirement. On her ninetieth birthday a public reception was given her at the Lyceum. She died in London, March 12, 1899. Consult: *Lewes, On Actors and the Art of Acting* (New York, 1878), *Scott, The Drama of Yesterday and To-day* (London, 1890); *Goodman, The Keeleys on the Stage and off* (ib., 1895).

KEELEY, ROBERT (1793-1869). An English comedian. He was born in London, where he appeared, after playing in the provinces, in 1818. During the following years he became a great favorite as *Jemmy Green* in *Tom and Jerry*, Mr. Bounceable in *What Have I Done?* Peter Pall Mall in *The Prisoner of War*, and in many other popular pieces. He was most effective in the character of comic suffering or stupidity. His Touchstone was excellent, and he made an admirable Sir Andrew Aguecheek when, with Charles Kean, at the Princess's Theatre in 1850, he revived *Twelfth Night*. He died in London. Consult *Marston, Our Recent Actors* (London, 1890), and authorities referred to under **KEELEY, MRS. MARY ANNE**.

KEEL-HAULING. A punishment formerly inflicted in the British and Netherlands navies for certain very serious offenses. By means of whips or tackles, usually on the foreyard arms, the offender was hauled from one side of the ship to the other (or from one yard to the other) underneath the keel, being made to sink by weights attached to his feet.

KEELING ISLANDS, or Cocos. A group of 23 small coral islands belonging to Great Britain and situated in the Indian Ocean, in lat. 12° 4' to 12° 13' S and long 96° 50' E., 500 miles southwest of Java (Map: World, L 30). Products are coconuts and coconut oil. The islands were discovered by Captain Keeling in 1609, studied by Darwin in 1836 and Dr. H. O. Forbes in 1878. The British acquired them in 1856. Pop., 1911, 749, mostly Malays. It was off these islands that the German cruiser *Emden* was destroyed by the Australian cruiser *Sydney* in the European War which started in 1914. See **WAR IN EUROPE**.

KEELSON, *kēl'son* (Swed. *kölsvin*, Dan. *kjölsvin*, Norw. *kjölsvill*, *keelson*, from Swed. *köl*, Dan., Norw. *kyl*, *keel* + *svill*, Icel. *svill*, AS. *syll*, Eng. *sill*; influenced in Swed., Dan. by popular confusion with *svin*, Goth.

svēin, OHG., AS. *swin*, Ger. *Schwein*, Eng. *swine*). In wooden vessels, a construction of timber similar to the keel, but resting on the floor timbers directly above the keel and bolted to it, thus gripping the floor timbers firmly in place. *Side keelsons* or *bilge keelsons* are smaller than the main keelson and placed out towards the turn of the bilge. *Sister keelsons* are side keelsons close up to the main keelson and bolted to it as well as to the floor-timbers and garboard strakes.

KEELY MOTOR. A machine purporting to furnish motive power at a minimum expenditure of energy. It began to attract attention in 1874 and for several years excited wide interest. Its inventor, John W. Keely, a carpenter who was born in Philadelphia in 1837 and died there Nov. 18, 1898, made many startling claims and predictions for the success of his motors, asserting that they were destined to revolutionize mechanics. Several hundred thousand dollars were subscribed for the stock of the company formed to control the invention, and, while the nature of the machine was kept a carefully guarded secret, it was widely exploited and attracted considerable attention. Various exhibitions were given, with some remarkable features; but the promised developments never appeared, and after the inventor's death the fraud was thoroughly exposed, it being shown that the force was supplied by a hidden compressed-air apparatus.

KEEN, DORA (1871-). An American traveler and Alpinist, also a social and educational worker. She was born in Philadelphia, a daughter of the surgeon W. W. Keen. After graduating from Bryn Mawr College in 1896, she held various responsible civic positions in Philadelphia, helping to bring about important reforms. In her travels she covered the North American continent from Alaska to Panama, both coasts of South America and the interior of the southern portion, eastern, western, and southern Asia and northern Africa; and she made numerous visits to Europe. Her activity as an Alpinist began with eight ascents of first-class peaks in the Alps in 1909-10. In the mid-summer of 1911 her inadequately outfitted expedition, hastily organized for the ascent of Mount Blackburn (16,140 feet) in Alaska, was unsuccessful, but, returning early in 1912, with only local prospectors for companions, she accomplished the first ascent of this sub-Arctic peak. Out of 33 days which the party spent entirely on glaciers, for 20 they were without tents, sleeping in snow caves at low temperatures; and for 10 days they had only candles for fuel. This expedition was immediately followed by a journey of 300 miles on foot and by open, camp-built boat across the Alaskan wilderness to the Yukon River, for 125 miles the route lay over Skolai Pass, which Miss Keen was the first woman ever to cross. In 1914, with three men, she made scientific observations of the glaciers of Harriman and College fiords, Prince William Sound, Alaska, and made the first exploration of the Harvard Glacier, reaching its sources (6100 feet). Miss Keen contributed numerous articles to popular and geographical magazines and lectured on her experiences. She became a fellow of the Royal Geographical Society, London, in 1914.

KEEN, WILLIAM WILLIAMS (1837-). An eminent American surgeon. He was born in Philadelphia and studied at Brown Univer-

sity, where he graduated in 1859. After a three years' course in Jefferson Medical College, Philadelphia, he served as an assistant surgeon in the Federal army during part of the Civil War. For two years he studied abroad, returning in 1866 to Philadelphia to practice and to lecture on anatomical subjects in Jefferson Medical College. He was in charge of the Philadelphia School of Anatomy during 1866-75, was professor of artistic anatomy in the Pennsylvania Academy of Fine Arts in 1876-90, professor of surgery in the Woman's Medical College in 1884-89, and thereafter, until his retirement in 1907, professor of surgery in Jefferson Medical College. A specialist in the surgery of the brain and nervous system, Dr. Keen was among the first in the United States to perform successfully new and difficult operations in this field. He received honorary degrees from Jefferson Medical College and Brown, Northwestern, Toronto, Edinburgh, Yale, St. Andrews, Greifswald, and Upsala universities, and served as president of the American Surgical Association (1898), the American Medical Association (1900), the Congress of American Physicians and Surgeons (1903), and the American Philosophical Society (after 1907). In 1914, at a meeting of the International Surgical Association, he was elected president for the meeting of 1917. After 1894 he was foreign corresponding member of the Société de Chirurgie de Paris, the Société Belge de Chirurgie, and the Clinical Society of London; honorary fellow of the Royal College of Surgeons of England, the Royal College of Surgeons of Edinburgh, the Deutsche Gesellschaft für Chirurgie, the Italian Surgical Society, the Palermo Surgical Society, and the Berliner Medicinische Gesellschaft; and associate fellow of the American Academy of Arts and Sciences. He published: *Clinical Charts of the Human Body* (1870), *Early History of Practical Anatomy* (1875); *Surgical Complications and Sequels of Typhoid Fever* (1898); *Addresses and Other Papers* (1905); *Animal Experimentation and Medical Progress* (1914); also an edition of *Heath's Practical Anatomy* (1870), the American edition of *Gray's Anatomy* (1887), the *American Text-Book of Surgery* (1899, 1903), and *Keen's System of Surgery* (1905-13).

KEENE. A city and the county seat of Cheshire Co., N. H., 43 miles (direct) southwest of Concord, on the Ashuelot River, and on the Boston and Maine Railroad (Map: New Hampshire, E 8). It is within 12 miles of Monadnock Mountain, is situated on a plain surrounded by lofty hills, and has broad and well-shaded streets, a State normal school, Elliot City Hospital, and a public library. The city has also a number of parks, covering altogether about 220 acres. Keene is noted for its manufactures of woodenware; it has several chair, furniture, pail, and tub factories, shops of the Boston and Maine Railroad, a pottery, shoe factory, woolen mill, glue works, toy, celluloid-comb, and wood-heel factories, a granite-cutting plant, and door, sash, and blind factories. The water works are owned by the municipality. Pop., 1900, 9165; 1910, 10,068; 1914 (U. S. est.), 10,451. Settled under the authority of Massachusetts in 1734, Keene was known as Upper Ashuelot until it was incorporated in 1753 by New Hampshire under its present name. It was chartered as a city in 1874. Consult Hale, *Annals of the Town of Keene from 1790 to 1815* (Keene, N. H., 1851),

and Griffin, *History of the Town of Keene* (ib., 1904).

KEENE, CHARLES SAMUEL (1823-91). An English pen-and-ink humorous artist, born at Hornsey. While working in an architect's office, for which he had given up his father's profession of law, he spent all his spare time in doing water colors of historical and nautical subjects, which his mother sold. The architect's office he soon forsook for wood engraving, in which he served a five years' apprenticeship. His first independent work was for the *Illustrated London News*, but it was *Punch* that made his reputation and with which he was closely connected from 1851. After 1872 Keene was much helped by the notes and sketches of humorous incidents made by his friend Joseph Crawhall. For the magazine *Once a Week*, started in 1859, he did illustrations to Charles Reade's *Cloister and the Hearth* and George Meredith's *Evan Harrington*. He stands first among English pen-and-ink artists, obtaining his effects without forcing. His etchings, only 50 in number and mostly for private circulation, also rank high. Consult: C. J. Keene, *Four Hundred Pictures of our People*, sketches from *Punch* (London, 1888); G. S. Layard, *Life and Letters of Charles Keene* (ib., 1892); *The Work of Charles Keene*, with introduction by Joseph Pennell (New York, 1897).

KEENE, LAURA (?1820-73). The stage name of Mary Moss, an actress, who was born in England, but who completed her career in America. Her greatest success before coming to this country was as Pauline in *The Lady of Lyons* (in London, 1851). She left England in 1852 and went, by way of the United States, where she made her first appearance in New York, on Sept. 20, 1852, to Australia. In 1855 she returned to New York and about a year later she opened there a playhouse bearing her own name. Her most celebrated production was *Our American Cousin*, which she brought out in 1858, with Joseph Jefferson as Asa Trenchard and E. A. Sothern as Lord Dundreary. She afterward toured with it, and it was during one of her presentations of this play in 1865 that President Lincoln was assassinated. Most of the last 10 years of her career she continued to direct her traveling company. As a star, she was very successful, especially in melodramatic pieces. Miss Keene was twice married—to H. W. Taylor in 1847 and to John Lutz 10 years later. She died at Montclair, N. J., Nov. 4, 1873. Consult Creahan, *The Life of Laura Keene* (Philadelphia, 1897).

KEENER, JOHN CHRISTIAN (1819-1906). An American bishop of the Methodist Episcopal Church South, born in Baltimore, Md. He graduated with the first class from Wesleyan University in 1835, entered the Methodist ministry in 1843, and when the church was divided in 1844 remained with the Church South. For nearly 20 years he was pastor of churches in New Orleans, and from 1866 to 1870 edited the *New Orleans Christian Advocate*. In 1870 he was elected Bishop. He was the author of *Post Oak Circuit* (1857; 13th thousand, 1875), published anonymously. He was highly esteemed by Jefferson Davis.

KEENER, WILLIAM ALBERT (1856-1913). An American jurist and legal scholar, born at Augusta, Ga. He graduated from Emory College in 1874 and from Harvard Law School in 1877. Admitted to the New York bar, he later

served as justice of the Supreme Court of that State. At Harvard he was assistant professor of law in 1883-88 and Story professor in 1888-90, and at Columbia University professor of law in 1890-92, Kent professor from then until 1902, and dean of the Law School from 1891 to 1901. He wrote a *Treatise on the Law of Quasi-Contracts* (1893), and edited a selection of cases on the law of contracts, private corporations, and quasi contracts, and on equity jurisprudence.

KEEP. In mediæval fortification, the central and principal tower or building of a castle, and that to which the garrison retired, as a last resort, when the outer ramparts had fallen. See CASTLE.

KEEP, ROBERT PORTER (1844-1904). An American educator and author. He was born at Farmington, Conn., and graduated from Yale University in 1865. After two years as an instructor at Yale, he was, during 1869-71, United States Consul at the Piræus, the harbor town of Athens, Greece. After his return he engaged in teaching at Williston Seminary, Easthampton, Mass., and in 1885 he was appointed principal of the free academy at Norwich, Conn. In 1903 he became principal of Miss Porter's School for Girls at Farmington, Conn. He was the author of a translation of Autenrieth's *Homeric Dictionary* (1876, later eds.), *Stories from Herodotus* (1879); *Essential Uses of the Moods in Greek and Latin* (1882), *Homér's Iliad*, books i-vi (1883), *Greek Lessons* (1885).

KEEP, WILLIAM JOHN (1842-). An American manufacturer of stoves and of testing machines, born at Oberlin, Ohio, where he studied in the college between 1858 and 1864. In 1865 he graduated in civil engineering from Union College. He then engaged in the manufacture of stoves and in 1884 became superintendent of the Michigan Stove Company. In 1885 he discovered the relation between shrinkage and the chemical composition of cast iron, and to determine this he devised the system of Keep's Test, or Mechanical Analysis. He was a vice president of the American Society of Mechanical Engineers in 1904-06. He is author of *Cast Iron* (1902).

KEEPER OF THE GREAT SEAL. See GREAT SEAL.

KEEWATIN, kē-wā'tin. A former district of Canada lying immediately west of Hudson Bay and extending north to the Arctic Ocean. By recent legislation the area was distributed to the provinces of Manitoba (q.v.) and Ontario (q.v.) at the south and to Northwest Territories (q.v.) at the north. The name was of Indian origin, signifying 'northwest wind.'

KEEWATIN, kē-wā'tin. A town in Kenora District, Ontario, Canada, on the Lake of the Woods and on the Canadian Pacific Railway, 130 miles east of Winnipeg (Map: Ontario, F 8). There is a park at Keewatin Beach. There are lumber and boat-building industries. Fine hunting and fishing are to be had in the vicinity. The town is a well-known summer resort. Pop., 1901, 1156, 1911, 1242.

KEFF, or EL-KEFF, ʔl-kəfʔ. A strongly fortified town in the northwestern part of Tunis, about 125 miles south-southwest of the city of Tunis. It is an important strategic point and a commercial centre, with a considerable trade in grain and olives. Its citadel on a rocky height above the town is occupied by a French garrison. The town dates from a Phœnician-

Numidian colony which became the Roman Sicca Veneris. It contains a ruined temple of Venus and several ancient Roman remains and is the seat of a geographical and archaeological society. Pop., 6500.

KEFIR, or KEPHIR, kəf'ər (Caucasian, from Turk. *kaif*, delight). A fermented beverage made from milk and similar to kumiss (q.v.). It is made in the Caucasus and has been introduced into Europe and America, where it is prescribed for invalids. In the United States cow's milk alone is commonly used, although a mixture of milk and buttermilk is sometimes employed. The true kefir fermentation is induced by *kefir grains*, which are hard, yellowish aggregations about the size of a pea and contain several yeast cells and a number of lactic acid bacilli. At the proper temperature the fermentation is completed in two or three days. Frequent shaking prevents the rising of the cream and later the formation of lumps of curd. A part of the milk sugar is broken up into alcohol, carbonic-acid gas, and lactic acid; but the casein is apparently not changed, as it is in the case of kumiss. Good kefir should be effervescent. It contains about 0.75 per cent of alcohol and 1 per cent of lactic acid, together with the constituents of normal milk in slightly diminished proportions. Kefir is richer in albuminoids than kumiss, contains less alcohol, and is less acid. As a remedy for lung diseases, stomach disorders, anemia, and glandular tuberculosis, kefir is held in high repute by the Caucasians, and its therapeutical value has lately been recognized by the medical profession also, especially in intestinal putrefaction, in auto-intoxication, and in stimulating nutrition in debility.

KEGON'SA, LAKE. One of the so-called Four Lakes (q.v.) of Wisconsin.

KEHAMA, kē-hā'mā. See CURSE OF KEHAMA, THE.

KEI, kī, or KEY ISLANDS. A group of islands in the eastern part of the Banda Sea, East Indian Archipelago, situated in lat. 5°-6° S. and about long 133° E. (Map: East Indies, H 7). It is composed of the islands of Great Kei and Little Kei and a number of islets, with a total area estimated at 572 square miles. With the exception of Great Kei, which is mountainous and volcanic, the islands of the group are low and of coral formation. They are all well wooded and fertile. Teakwood is found in abundance. The group belongs to the Dutch, forming a part of the Residency of Amboina. Pop. (est.), 23,000, chiefly natives of New Guinea and Malays.

KEIFER, kī'fər, JOSEPH WARREN (1836-). An American soldier and politician, born in Clark Co., Ohio. He was educated at Antioch College and in 1856 settled in Springfield, Ohio, where he began to study law. Two years later he was admitted to the bar, but at the outbreak of the Civil War gave up his practice to accept a commission as major of the Third Ohio Infantry, and rose to the brevet rank of major general of volunteers in 1865. During Lee's last campaign General Keifer's troops were among those which compelled the surrender of Ewell's corps at Sailor's Creek, and General Keifer received the surrender of Commodore Tucker and the Marine Brigade, which numbered about 2000 men. At the close of the war he declined a commission as lieutenant colonel of the Twenty-sixth United States Infantry. He served

in the Ohio State Senate in 1868-69, held a number of offices in the Grand Army of the Republic, was chosen a delegate to the Republican National Convention in 1876, and the same year was sent to Congress, of which body he continued to be a member until 1883. During the last two years he was Speaker of the House. In 1873 he was elected president of the Lagonda (Ohio) National Bank. At the outbreak of the Spanish-American War he was commissioned a major general of volunteers and for a time commanded the Seventh Corps, encamped near Havana. He wrote *Slavery and Four Years of War* (2 vols., 1900).

KEIGHLEY, kē'li. A municipal borough in the West Riding of Yorkshire, England, on the Aire, 17 miles west-northwest of Bradford (Map. England, E 3). It has important manufactures of worsted, machines, tools, and paper. A mechanics' institute, opened in 1870, contains a flourishing art school and museum. The Leeds and Liverpool Canal connects it with Hull. Its growth is due to its manufacturing enterprise and dates largely from its incorporation in 1882. It has three parks, a free Carnegie library, and owns its water, gas, tramways, artisans' dwellings and other house property, baths and wash-houses, and a cemetery. It was incorporated in 1882 with a mayor, 6 aldermen, and 18 councillors. Pop., 1901, 41,564; 1911, 43,487.

KEIGHTLEY, kēt'li, THOMAS (1789-1872). An Irish author, born in County Kildare. He was educated at Trinity College, Dublin, settled in London in 1824, and devoted himself to literary work. Among his numerous publications are: *Fairy Mythology* (1828; Bohn's Library, 1850), *Tales and Popular Fictions* (1834); *Mythology of Ancient Greece and Italy* (1831); creditable histories of Greece (1835), of Rome (1836), of England (1837-39), of the Roman Empire (1840), and of India (1846-47). *Life, Opinions, and Writings of John Milton* (1855); *Shakespeare Expositor* (1867); *The Crusaders* (1834); *Secret Societies of the Middle Ages* (1837), which was published anonymously and against the author's wishes.

KÉIKI, kē'kē, or HITOTSUBASHI, shtōts'-bsh-i (1837-1902). A Japanese statesman, Shogun of Japan, and "the last of the Tycoons." He was the seventh son of the famous Nariaki, Daimyo of Mito and chief of the party opposed to foreign intercourse when the Townsend Harris Treaty of 1858 forced this issue upon the Yeddo government and the daimyos. In his eleventh year Kéiki was adopted into the feudal house of Hitotsubashi in Yeddo, and at 15 took the name of Yoshinobu, or, as the Chinese characters representing the name are pronounced, Kéiki. When the childless Shogun Iyesada was looking about for an heir, the candidacy of Kéiki was urged by his father and a large following of the daimyos, because of his abilities, popularity, and nearness of relationship to the Tokugawa (q.v.) or shogunal family, and because through him they hoped to keep Japan isolated from foreign contact, and thus uphold the dignity and sacredness of the land; but the Premier Ii (q.v.) appointed Iyémochi, of the house of Kii; but after the assassination of Ii, Kéiki was appointed the young Shogun's guardian. He arrived in Kyoto March 1, 1863, being expected to lead an army to expel the foreigners from the country, the Emperor also making him chief guardian of his own person, at a time when the Choshu clansmen

were about to attack the city and carry off the Mikado. Kéiki avoided factions and endeavored to steer his way clear amid multiplying complications. He summoned the daimyos to a deliberative assembly in Kyoto to consider the situation. When the Shogun Iyémochi died of kak'ke, Aug. 8, 1866, the court conferred upon Kéiki the headship of the Tokugawa family. One of the most notable events of the new régime was the repeal of the old ordinance 日本に居る日本人を去るの令, Japanese to leave the country. On Nov. 1, 1867, he resigned the office of Shogun, a post he had been very unwilling to accept, but, leaving Kyoto Jan. 3, 1868, after the coup d'état (Jan. 3, 1868), which changed the whole system of administration and placed a new government in power, subject to the Mikado only, he was later recalled from Osaka by the Mikado and the new government, who assured him of their friendship. With his army he set out on January 27, but his troops were defeated at Fushimi. Kéiki fled to Yeddo, first notifying the foreign ministers then in Osaka that he was no longer able to give them any protection. Arrived at Yeddo, he decided to submit to the Mikado and requested his supporters to do the same. His submission was accepted, pardon was granted, and he retired to Shidzuoka. His private name was Ichido. Consult E. W. Clement, "Last of the Shoguns," in *Open Court*, vol. xxviii (Chicago, 1914).

KEIL, kil, HEINRICH GOTTFRIED THEODOR (1822-94). A German classical scholar, born at Gressow, near Wismar. After studying at the universities of Göttingen and Bonn, he spent two years (1844-46) in investigating the manuscripts preserved in the libraries of Italy. In 1859 he was made professor of classical philology at Erlangen and from 1869 until his death filled a similar chair at the University of Halle. He is celebrated chiefly for his remarkable critical edition of the *Grammatici Latini* (1855-80); of the seven volumes, five were done by Keil, while the two on Priscian were by Hertz. His other well-known works are editions of the *Epistulae of Pliny the Younger* (1853; 2d ed., 1870, with index by Mommsen); Varro's *Rerum Rusticarum Libri Tres*, with commentary (1882-84), and Cato's *De Agri Cultura* (1892 et seq.). Consult Sandys, *A History of Classical Scholarship*, vol. iii (Cambridge, 1908).

KEIL, JOHANN KARL FRIEDRICH (1807-88). A Lutheran theologian, born in Lauterbach, near Oelsnitz, Saxony. He was educated at Dorpat and Berlin and returned in 1833 to teach Old and New Testament exegesis and Oriental languages at the former university, where he remained until his retirement to Leipzig, with a pension, in 1858. He was joint editor of commentaries upon various books of the Old Testament (1861-67), which exhausted several German editions and were also translated into English. He had published previously: *Der Tempel Salomos* (1839); *Lehrbuch der historisch-kritischen Einleitung in die Schriften des alten Testaments* (1855); *Handbuch der biblischen Archäologie* (1858-59).

KEIM, kim, KARL THEODOR (1825-78). A German Protestant theologian. He was born at Stuttgart and studied under J. C. Baur at the University of Tübingen (1843-47), devoting himself to philosophy, ecclesiastical history, and biblical criticism. Having successively been tutor at Ulm and at Tübingen, vicar at Stuttgart, deacon and archdeacon at Esslingen (1856-59),

he became professor of historical theology at the University of Zurich in 1860 and at Giessen in 1873. He was prominent among the liberal theologians of Germany and published several volumes on the history of the Reformation in Swabia, but is chiefly remembered as the author of the *Geschichte Jesu von Nazara* (3 vols., 1867-72), one of the best works on the life of Christ from a rationalistic point of view. An English translation of it was published under the title *Jesus of Nazareth, and the National Life of Israel* (6 vols., 1873-82).

KEIR-HARDIE, kēr-hār'dī, JAMES. English labor leader. See **HARDIE**

KEISER, kī'zēr, REINHARD (1674-1739). A German composer, born at Teuchern, near Weissenfels. He received his early musical education from his father and later perfected at the Thomasschule and the University of Leipzig. His first success, *Ismene*, produced when he was but 18 years of age, was followed one year later by the opera *Basilius*, which established his reputation and led to his removal to Hamburg, then the leading operatic centre of Germany. He wrote about 120 operas during the 45 years of his residence there and is most remarkable for his richness in melodic invention. While for the vast majority of his operas he used the stereotyped subjects dealing with Greek mythology, he was the first German to use also popular contemporary subjects (often obscene). In 1728, after his return from Copenhagen, where for six years he had acted as musical director to the King, he was appointed canon and cantor of St Catharine's Church, Hamburg. His compositions include oratorios, cantatas, passion music, and considerable secular and chamber music.

KEITH, kēth. A Scottish historical house which first appears on record during the latter half of the twelfth century. It took its name from the lands of Keith in East Lothian, to which the office of the King's marischal was attached. About 1458 Sir William Keith was created Earl Marischal and Lord Keith. His house reached its highest power in the person of his great-great-grandson, the fourth Earl, who was a member of the Privy Council in the reign of Mary Queen of Scots, and by marriage with his kinswoman, the coheress of Inverurie, nearly doubled the family domains, which now included lands in seven shires. These vast possessions passed to his grandson GEORGE, the fifth Earl, who in 1593 founded the Marischal College in the University of Aberdeen. After adding the lands of the ancient abbey of Deer to his estates, misfortunes fell upon the house and within less than a century Dunnottar was in ruins and its lord a landless exile. At the age of 22, GEORGE, the tenth and last Earl Marischal, took part, with his younger brother JAMES, in the rising of 1715. He was attainted, and his estates were forfeited; but he himself escaped abroad, where he rose to distinction in the Prussian service. His communication to the British government of a political secret which he learned when Prussian Ambassador at Madrid procured his pardon in 1759. A year or two afterward he revisited Scotland and bought back part of the family estates, but refused the proffered restoration of the family titles. He speedily returned to Prussia and died there in 1778 at the age of 86. His brother, who had risen in the Prussian service to the rank of field marshal, fell at Hochkirch in 1758.

(See **KEITH**, JAMES.) Neither having any issue, the direct male line of the house came to an end. Consult Buchan, *The Ancient and Noble Family of Keith* (Peterhead, 1820); Taylor, *The Great Historic Families of Scotland* (London, 1887); Sir Robert Douglas, *Peerage of Scotland* (2d ed., 2 vols., Edinburgh, 1913).

KEITH, ALEXANDER (1791-1880). A Free Church of Scotland divine. He was born at Keith Hall, Aberdeenshire, Nov. 30, 1791; educated in Aberdeen; was a minister of the Established church until the disruption in 1843, when he joined the Free church. His principal work, *Evidence of the Truth of the Christian Religion Derived from the Literal Fulfillments of Prophecy* (1828), has passed through 40 editions and been translated into several languages. It was followed by *The Signs of the Times* (1832); *Demonstration of the Truth of the Christian Religion* (1838); *The Land of Israel* (1843); *The Harmony of Prophecy* (1851). These books represent a literal interpretation of prophecy now largely laid aside. With a deputation from the Church of Scotland, he visited Palestine to make researches respecting the condition of the Jews and published a *Narrative of the Mission to the Jews* (1841). This has been illustrated by his son, Dr. G. H. Keith, of Edinburgh, who accompanied him in his tour and was the first person to take daguerreotype views of the Holy Land. He died at Buxton, England, Feb. 8, 1880.

KEITH, ARTHUR (1864-). An American geologist. He was born at St Louis, Mo., and was educated at Harvard University (A.B., 1885; A.M., 1886). In 1886-87 he was an assistant on the Massachusetts State Geological Survey. He served as assistant geologist, 1887 to 1894, and thereafter as geologist, on the United States Geological Survey, and the results of his investigations, dealing particularly with the structural and stratigraphic geology of the United States, are published in various bulletins and reports of the Geological Survey.

KEITH, ARTHUR (?-). A British anatomist and physiologist. He was educated at Aberdeen University College, London, and at Leipzig. At the Royal College of Surgeons he became museum conservator and Hunterian professor. In 1899-1902 he was secretary of the Anatomical Society of Great Britain, in 1912-13 was president of the Royal Anthropological Institute, and in 1913 was made a fellow of the Royal Society. His most valuable anatomical work was on the structure and functions of the heart. He was assistant editor of Treves's *Surgical and Applied Anatomy*, edited Hughes's *Practical Anatomy* (1902), and published *Introduction to the Study of Anthropoid Apes* (1896), *Human Embryology and Morphology* (1901), *Ancient Types of Man* (1911), and *Man: A History of the Human Body* (1912).

KEITH, BENJAMIN FRANKLIN (?-1914). An American theatrical manager, born at Hillsboro Bridge, N. H. Until 1885 he was proprietor of a circus. He then became part owner of the Gaiety Theatre in Boston, where he initiated the continuous-performance theatre. In 1906, with F. F. Proctor, he formed the Keith and Proctor Amusement Company, which soon controlled many vaudeville theatres throughout the United States. He also became president of the United Booking Office of America.

KEITE, GEORGE (c.1639-1716). A Church

of England divine and early missionary in America. He was born near Aberdeen, at whose university he was educated for the Presbyterian ministry. About 1662, however, he adopted Quaker principles and was associated with George Fox and Robert Barclay in public defense of them. He came to America soon after 1684 and for some years preached and practiced the same doctrines. Gradually separating from the Friends, he was denounced by William Penn as an apostate and, after endeavoring to organize a body of Christian (or Baptist) Quakers, entered the Church of England in 1700. His reasons for this step were considered so cogent that they were chosen for the first publication of the newly organized Society for Promoting Christian Knowledge. He was a zealous missionary for his new creed, traveling through the Northern Colonies (1702-04) and baptizing hundreds of Quakers. He returned to England in 1704 and was appointed rector of Edburton in Sussex in the next year. He was a man of wide learning. In 1706 he published *A Journal of Travels from New Hampshire to Caratuck, on the Continent of North America*. He was also the author of a new method for calculating longitude, in *Geography and Navigation Completed* (1709). Consult R. Jones, *The Quakers in the American Colonies* (New York, 1911).

KEITH, GEORGE KEITH-ELPHINSTONE, VISCOUNT (1746-1823). A British admiral. The fifth son of the tenth Lord Elphinstone, he was born at Elphinstone, Scotland, Jan. 7, 1746. He entered the navy in his boyhood and served in the East Indies, China, and other parts of the world. He commanded the frigate *Perseus* at the battle of Bunker Hill in 1775, in the action at Fort Mifflin on the Delaware in 1777, and served on shore in 1780 at the reduction of Charleston, being actively employed in the intervals in intercepting American blockade runners and privateers. Within the decade of peace from 1783 to 1793 he sat in Parliament, first for Dumbarton and later for Stirlingshire. He served in the Mediterranean squadron under Lord Hood at Toulon in 1793, was made a rear admiral in 1794, and in the following year was sent to operate against the Dutch colonies. In this expedition he was successful, taking possession of Cape Colony, Ceylon, Cochin, Malacca, and the Molucca Islands and finally, in August, 1796, capturing the Dutch squadron of West Africa. For these exploits he was elevated to the Irish peerage as Baron Keith of Stonehaven Marischal. In 1800 he cooperated with the Austrians in the capture of Genoa. From 1803 to 1807 he was commander in chief in the North Sea and in 1815 commanded the Channel fleet which prevented the escape of Napoleon I and led to his subsequent surrender to Captain Maitland of the *Bellerophon*. In 1814 he was created Viscount Keith of the peerage of the United Kingdom. He died March 10, 1823, at Tullyallan, Perthshire, Scotland. Consult Allardyce, *Memoir of the Honble G. K. Elphinstone, K.B., Viscount Keith* (London, 1882).

KEITH, JAMES (1696-1758). A Scottish general, best known as MARSHAL KEITH. The second son of William, ninth Earl Marischal of Scotland, and Lady Mary Drummond, daughter of the Earl of Perth, he was born at the castle of Inverurie in Aberdeenshire on June 14, 1696, and educated for the legal profession at Edinburgh University. Having subsequently decided to pursue a military career, he and his elder

brother George, Earl Marischal, took part, on the side of the house of Stuart, in the insurrection of 1715 and after its suppression were attainted (See KEITH, the house of.) Having effected his escape, Keith remained in France for some years, improving his knowledge of the military profession and waiting for an opportunity of obtaining service. In 1719, with his brother and other Scottish noblemen, he sailed on board the fleet which was fitted out by Cardinal Alberoni and the Spanish court for the invasion of Scotland. The Jacobites were defeated at Glenshiel by the royal army, under General Wightman, and obliged to retreat. Keith escaped to the Continent. He continued in the Spanish service, but as his expectations of promotion were repeatedly disappointed, in consequence of his firm attachment to his religion, he applied for a recommendation to the Russian government, which was immediately given, and he received from the Czar Peter II a commission as major general. He distinguished himself in the wars with the Turks and Swedes, particularly at the siege of Oczakov and the reduction of the Aland Islands, but, finding the Russian service in various respects disagreeable, he entered that of Prussia in 1747. King Frederick knew his merits and gave him the rank of field marshal. From this time his name is associated with that of the King of Prussia, who relied as much on the military genius of Keith as he did on the diplomatic ability of his brother the Earl Marischal. Keith's talents became still more conspicuous upon the breaking out of the Seven Years' War. He shared the doubtful fortunes of the King before Prague and was present at the great victory of Rossbach and at the retreat from Olmütz. When the Austrians under Daun, and the Prussians under their King, met at Hochkirch on Oct. 14, 1758, Keith commanded the right wing. The Prussian army was beaten, and Keith, surrounded and overwhelmed by numbers while endeavoring to force his way at the bayonet point, was shot through the heart. His body was recognized by Count Lacy, formerly his scholar in the art of war, and was buried at Hochkirch. Keith wrote a brief but interesting memoir of a memoir of his own life, published in the year 1714 and ending in 1734, which was printed in 1843 by the Spalding Club. For his military career after entering the Prussian service, consult Carlyle, *The Life of Frederick the Great* (New York, 1858).

KEITH, SIR WILLIAM (1680-1749) A Lieutenant Governor of Pennsylvania and Delaware. The son of Sir William Keith of Ludquhairn, Aberdeenshire, Scotland, he was born near Peterhead. His youth was spent in the exiled Stuarts at the court of Louis XIV. He was appointed Surveyor-General of Customs in the Southern Colonies of North America and was Governor of Pennsylvania (1717-26). Although he established some order in the government, his administration was in the main that of a self-seeking demagogue. In 1720 he succeeded to the baronetcy of his father, who had died insolvent, and later (1728), becoming pecuniarily involved, left America to avoid his creditors. His subsequent reputation is that of a man intriguing, treacherous, and vain. He wrote a *History of Virginia* (1738) and was the author of a volume of miscellaneous papers that appeared just before his death, which took place on Nov. 18, 1749, while imprisoned for debt in the Old Bailey, London.

KEKEWICH, kēk'wich, ROBERT GEORGE (1854-1914). An English soldier. He entered the army in 1874 and served in the Malay Peninsula (1875-76), in the Nile expedition (1884-85), in Suakin (1888), and in South Africa (1899-1902). He gained fame through his 126-day defense of Kimberley, from Oct. 15, 1899, to Feb. 15, 1900, when he was relieved by General French. Subsequently he was wounded during De la Rey's fierce attack on his column at Moedwill (September, 1901), and in April of the next year he defeated Commandant Kemp at Roooval. During the war he was promoted to major general, and later he was retired.

KEKULÉ VON STRADONITZ, kā'kōō-lā fōn shtrā'dō-nīts, FRIEDRICH AUGUST (1829-96). A celebrated German chemist, born at Darmstadt. He studied at Giessen and Paris and in 1856 became privatdocent at Heidelberg. In 1858 he was made professor of chemistry at Ghent and seven years later professor at Bonn, where he remained till his death. His work was in organic chemistry, the development of which during the second half of the nineteenth century was determined largely by the valency doctrine introduced by Kekulé (See CHEMISTRY; CARBON COMPOUNDS. VALENCY). His brilliant application of the valency idea to benzene and its derivatives led him to the establishment of the constitutional formula of benzene, which has been the guide light of all subsequent investigations of this great series of compounds, including all the modern synthetic dyestuffs. His writings include *Lehrbuch der organischen Chemie* (1861-87) and *Chemie der Benzolderivate und der aromatischen Substanzen* (1867-80). His original contributions were published mostly in the *Annalen der Chemie*.

KEKULÉ VON STRADONITZ, REINHARD (1839-1911). A German archaeologist. He was born at Darmstadt and was educated at Erlangen, Göttingen, and Berlin. In 1873 he was appointed professor at Bonn and later professor at Berlin. His works include: *Hebe, eine archaologische Abhandlung* (1867), *Die Balustrade des Tempels der Athena Nike* (1869, 1881), *Die antiken Bildwerke in Theseion* (1869), *Die Gruppe des Künstlers Menelaos in Villa Ludovisi* (1870), *Ueber die Entstehung der Gotterideale der griechischen Kunst* (1877), *Griechische Thonfiguren aus Tanagra* (1878), *Ueber den Kopf des Prazetischen Hermes* (1881), *Zur Deutung und Zeitbestimmung des Laokoon* (1883), *Die antiken Terrakotten* (1880-84); and the biography *Das Leben Friedrich Gottlieb Welckers* (1880). He contributed also, to various editions of Baedeker's *Greece*, "A History of Greek Art."

KE'LANTAN, or KI'LANTAN. A native state lying on the eastern side of the Malay Peninsula, having an area of about 5500 square miles. The state is ruled by a native Sultan under British protection. The chief industry is agriculture, rice, rubber, copra, resin, and tapioea being the principal products. There is, however, no little mineral wealth, and extensive concessions are held by British mining companies. Silk weaving, boat building, and brick-making are the more prominent of the industries. The port of Kelantan is in regular steamship communication with Singapore and Siam and, by a railway now (1915) under construction, will be joined to the railroad system of the Federated Malay States. The capital,

Kota Bharu, has a population of about 12,000; while that of the state is (1912) 286,750, mainly Moslems.

KELAT, kē-lāt'. A city of Baluchistan. See **KHELAT**.

KELCEY, kēl'si, HERBERT (LAMB) (1856-). An American actor, born in London, England. His first appearance on the stage was at Brighton in *Flirtation* (1877), and he first appeared in London in *Bow Bells* (1880). Later he played important rôles at Drury Lane and the Royalty, but in 1882 he came to the United States in *Taken from Life* at Wallack's Theatre, New York. Subsequently he played in *Money* (1883-84), *A Sheep in Wolf's Clothing* (1884), and *Harvest* (1886). From 1887 to 1896 he was a member of Daniel Frohman's company at the Lyceum, starred with Effie Shannon in *The Moth and the Flame* (1898), and later played in *The Daughters of Men* (1906), *Widowers' Houses* (1907), *The Lady from Oklahoma* (1911), and *Years of Discretion* (1912).

KÉLER-BÉLA, kā'lēr-bā'la (ALBERT VON KÉLER) (1820-82). An Austrian violinist and composer. He was born at Bartfeld in Hungary and was a pupil of Sechter at Vienna, where he was at the same time a member of the orchestra of the Theater an der Wien. In 1854 he was appointed leader of Gungl's celebrated band at Berlin and the next year succeeded Lanner at Vienna. From 1856 to 1863 he was kapellmeister of an infantry regiment in the Vienna garrison. He moved to Wiesbaden in 1867, where he was the conductor of the Kur Orchestra, which post he resigned because of ill health in 1873. He composed much popular dance music, violin solos, and orchestral music generally. His overtures and compositions for small orchestra are still popular.

KELETI, kēl'ē-tē, GUSTAV FRIEDRICH (1834-1902). An Hungarian landscape painter and writer on art, born at Pressburg. He first studied law at Pest and Vienna and became a tutor in the family of Baron Eötvös, before taking up painting at the Munich Academy under Fischbach, Voltz, and Schleich. He developed an independent style in the spirit of romanticism. Several of his landscapes are in the National Museum at Budapest. By his writings he contributed much towards the elevation of art criticism in Hungary, and under his direction were established in 1871 the Royal Hungarian School of Drawing and in 1880 the School of Industrial Art, of which he became the superintendent. He was elected a member of the Hungarian Academy in 1874.

KEL/LAR, HARRY (1849-). An American prestidigitator, born at Erie, Pa. He assisted the "Fakir of Ava," magician; later was business manager of Davenport Brothers, spirit mediums, and with other entertainers traveled in Mexico, South America, Africa, and Oriental countries. After 1884 he appeared in the leading American cities. Perhaps the best-known illusionist of his time, he published *A Magician's Tour up and down and round about the Earth* (1886) and *Kellar's Variety Entertainments* (1901).

KELLE, kēl'le, JOHANN (1829-1909). A German philologist, born at Riga, and educated at Munich. From 1857 to 1899 he was professor of the German language and literature in the University of Prague. His work on Otfrid includes: *Otfrids von Weissenburg Evan-*

geliienbuch (1856); *Die Formen und Lautlehre der Sprache Otfride* (1869); *Christi Leben und Lehre, besungen von Otfrid: Aus dem Althochdeutschen übersetzt* (1870); *Glossar zu Otfrides Evangelienbuch* (1879-81). His work on Notker is no less important; in general it aims to prove that the writings bearing his name are not by a school or group of translators, but by Notker alone, and includes: *Verbum und Nomen in Notkers Boethius* (1885); *Die Sankt Galler deutschen Schriften und Notker Labeo* (1888); *Untersuchungen zur Uebersetzung, Uebersetzung, Grammatik der Psalmen Notkers* (1889). Among his other works the following should be mentioned: *Die Jesuitengymnasien in Oesterreich* (1873); *Vergleichende Grammatik der germanischen Sprachen*, vol. i (1863), *Geschichte der deutschen Literatur von der ältesten Zeit bis zum 13. Jahrhundert* (1892); *Ueber die Quelle von Ezras Gesang von den Wündern Christi* (1893); and his *Speculum Ecclesiae* (1858).

KELLER, kē'l'ēr, ADELBERT VON (1812-83). A German philologist, born at Pleidelsheim and educated under Uhland at Tübingen, where, after study at Paris, he became privatdozent and assistant librarian (1835). After travels in Italy and research in Italian libraries, he was professor and librarian at Tübingen until 1850, when he became president of the Literarische Verein in Stuttgart. In this office much of his work as editor of German works was done, while his work in Romance belongs to the earlier period. He wrote: *Li romans des sept sages* (1836); *Altfranzösische Sagen* (last ed., 1876), a complete edition of Cervantes (1838-42); *Romancero del Cid* (1840); *Zwei Fabliaux* (1840); *Diokletians Leben* (1841); *Li romans dou chevalier au leon* (1841); *Gesta Romanorum* (1842); with Rapp, a translation of Shakespeare (1843-46); *Römvart* (1844); *Altdeutsche Gedichte* (1846); *Alte gute Schwänke* (last ed., 1846); *Lieder Heinrichs von Württemberg* (1849); *Lieder Guillems von Burgunden* (1849); *Meister Altsuerts Werke* (1850); *Italienscher Novellenschatz* (1851-52); *Fastnachtsspiele aus dem funfzehnten Jahrhundert* (1853-58); *Ayrs Dramen* (1864-65); *Das deutsche Heldenbuch* (1867); *Hans Sachs* (1870-81), *Tüngers Facetiae* (1875); *Uhland als Dramatiker, mit Benutzung seines handschriftlichen Nachlasses dargestellt* (1877); *Das Nibelungenlied nach der Paristenhandschrift* (1880); *Verzeichnis altdeutscher Handschriften* (ed. by Sievers, 1890). Consult Fischer, *Nekrolog für A. von Keller* (Leipzig, 1884), and article in the *Allgemeine deutsche Biographie*, vol. xvii (ib., 1883).

KELLER, ALBERT VON (1845-). A Swiss-German historical, genre, and portrait painter, born at Gais (Appenzell). He studied philosophy and law at the University of Munich before taking up painting as a pupil of Lenbach and afterward of Ramberg at the academy there. After traveling in Italy, France, England, and the Netherlands, he exhibited in Vienna (1873) "An Audience with Louis XV," then painted for a time groups and female figures in modern costume, and scenes from antique life, with rich architectural surroundings. "A Roman Bath" (Königsberg Museum) was followed by the masterly "Raising of Jairus's Daughter" (1886, Munich), "Empress Faustina in the Temple of Juno at Praeneste," "The Witch's Sleep" (1888), "St.

Julia on the Cross" (1892). Among the best known of his other works are "Chopin" (New Pinakothek, Munich), "The Portrait Painter" (National Gallery, Berlin), "The Happy Sister," "Judgment of Paris," and "The Crucifixion." He is an artist of great originality in his delicate and subtle color as well as in his very modern conceptions of classic and religious themes and of portraiture. One of the chief leaders of the new Realistic school, he became president of the Munich Secession Society, which possesses some of his best sketches. He was awarded gold medals in Munich and Berlin; was named professor at and honorary member of the Munich Academy; was decorated in 1898 with the order of the Bavarian Crown, which conferred upon him nobility, and received many other distinctions. A selection of his works, in photogravure, was published in Munich in 1899. Consult Rosenhagen, *Albert von Keller* (Bielefeld, 1912).

KELLER, ARTHUR IGNATIUS (1867-). A leading American illustrator and painter. He was born in New York and studied at the National Academy of Design under Wilmarth and Ward and later in Munich under Loeffts. Though preëminently an illustrator, he also deserves an honorable place among contemporary American painters for his remarkable sketches in oil and for his water colors. In illustrative work he possesses a free spontaneous style and furnishes a conscientious yet individual interpretation of the author. He is perhaps at his best in his renderings of the Colonial era and the Civil War. Among the books illustrated by him are Herbert's *The First American*, Wister's *The Virginian*, Stockton's *Kate Bonnet*, Gilbert Parker's *The Right of Way*, Bret Harte's *Stories*, Longfellow's *Hanging of the Crane*, Irving's *Sleepy Hollow*, and Dickens's *A Christmas Carol*. His painting "At Mass" was bought by the Munich Academy. "Lead, Kindly Light" received a gold medal at Philadelphia in 1899, and "Washington's Wedding Reception" a silver medal at Paris in 1900. He won the Evans water-color prize of the American Watercolor Society in 1902 and a gold medal at St. Louis in 1904.

KELLER, kē'l'ār, EMILE (1828-1909). A French politician, born at Belfort. In 1857 he was elected deputy for the Haut-Rhin District and soon made himself prominent as a leader of the Roman Catholic party. He lost his seat in 1863, but was reëlected in 1869. He commanded a volunteer corps in the Franco-Prussian War, and as a member for Haut-Rhin again in 1871 he made a stirring speech against the cession of Alsace and Lorraine to Germany. When the treaty was signed, he left the Assembly, with other Alsatians, but was back as member for Belfort in 1876 and again in 1885. His publications include: *Histoire de France* (9th ed., 1894); *L'Encyclopédie et les libertés de l'église gallicane* (1860); *L'Encyclopédie et les principes de 1789* (1865); *Le général de Lamoricière* (1873). *Les congrégations religieuses en France* (1880).

KELLER, kē'l'ār, FERDINAND (1800-81). A Swiss archaeologist, born at Zurich. He studied theology and natural sciences at Zurich, Lausanne, and Paris. In 1831 he was made an instructor at Zurich and secretary of the Society for Natural Research, and in this capacity he published various works on naked rock soil and vent holes in the Alps. The discovery of

the sepulchral mound at Burghölzli led to the founding of an antiquarian society of which Keller was president for 40 years, and of a museum, the growth of which was largely due to him. His most important discovery was the pile dwelling at Obermeilen, on Lake Zurich, in the winter of 1853-54. Besides his articles on this subject in the *Proceedings* of the Antiquarian Society, he published *Bauriss des Klosters Sankt Gallen vom Jahr 820* (1844) and an archaeological map of eastern Switzerland (1874). Consult Meyer von Knonau, *Lebensabriss von Ferdinand Keller* (Zurich, 1882), and Lee, *The Lake Dwellings of Switzerland, and Other Parts of Europe*, by Dr. F. Keller (2d ed., London, 1878).

KELLER, FERDINAND (1842-). A German historical, genre, and portrait painter. He was born and educated at Karlsruhe. In 1857 he accompanied his father and brother to Brazil, where he sketched diligently from nature in the tropical forests. He returned to Karlsruhe in 1862, studied landscape painting under Schirmer and then figure painting under Canon, whereupon he spent four years in Italy, mostly in Rome. His "Death of Philip II" was awarded the first prize at the International Art Exhibition in Rio de Janeiro. Besides large compositions of Brazilian scenery, and numerous portraits, he next produced "Burning of Rome under Nero" (1873, medal Vienna Exposition) and became widely known through his successful design for the curtain of the New Theatre at Dresden (1876). Then followed "Victory of Margrave Ludwig Wilhelm of Baden over the Turks at Salankamen, 1691" (1879, Karlsruhe Gallery), "Hero Finding the Body of Leander" (1880, Vienna Academy), and later "Apotheosis of William the Victorious" (1888, National Gallery, Berlin). He scored a great triumph with a large allegorical composition, representing the founding of Heidelberg University, in a "Triumphal Progress of Pallas Athens before Elector Ruprecht" (1886, in the Aula of the university). In later years he devoted himself chiefly to portraiture, numbering among his sitters the Grand Duke and Duchess of Baden and Emperors William I and II. He was appointed professor and in 1881 director of the School of Art in Karlsruhe and ranks among the chief modern colorists in Germany.

KELLER, FRIEDRICH LUDWIG VON (1799-1860). A Swiss-German jurist, pupil of Savigny. He was born at Zurich, studied jurisprudence at Berlin and Göttingen (1819-22), and on his return home (1825) became professor of civil law, took an active part in Swiss politics, and soon became head of the Liberal radicals of Zurich. In 1831 he was made head of the Swiss judiciary. From 1843 to 1847 he was professor in the University of Halle and then went to Berlin as successor of Puchta. He became a Conservative member of the Lower House and because of his services to the monarchical party was ennobled and called to the Upper House. His principal works are *Ueber Litiskontestation und Urteil* (1827) and *Der römische Zivilprozess und die Aktionen* (6th ed., 1883). His *Vorlesungen über die Pandekten* was edited by Friedberg (1861) and by Lewis (1867).

KELLER, GOTTFRIED (1819-90). A celebrated Swiss-German novelist and poet, one of the best modern short-story writers, remarkable for his blending of the humorous and the tragic,

the realistic and the romantic. He was born in Zurich of poor but excellent parents. His mother, widowed early, gave him the best education she could in the local schools. The boy studied landscape painting unsystematically with rather poor teachers in Zurich, wasted much time, and read quite widely but carelessly. Supported by his mother's meagre savings, he continued his art studies in Munich from 1840 to 1842, partly under the direction of Julius Lange, but more often independently. Illness, poverty, and small success in his chosen art caused his return to his native town. Here he led an aimless life from 1842 to 1848, making the acquaintance of Freiligrath (q.v.), falling in love with Luise Rieter, writing lyrics, and finally deciding that literature rather than painting was his proper field. He appeared as a lyric poet first in 1846. Assisted by a stipend from the Zurich department of education, he studied literature, history, and philosophy at Heidelberg during the years 1848 to 1850, coming under the influence of H. Hettner (q.v.) and Ludwig Feuerbach (q.v.). The years 1850-55 he spent in Berlin in straitened circumstances. At this time he came under the influence of Varnhagen (q.v.) and Duncker, studied the drama, wrote the biographical novel *Der grüne Heinrich* (4 vols, first form, 1854-55; revised form, very different, 1879-80, 70th ed., 1912), some lyrics, and the first volume of his collection of short stories, *Die Leute von Seldwyla* (vol. i, 1856; vol. ii, 1874; 73d ed., 1912). Berlin marks a turning point in his career. Returning to Zurich, he was the efficient Secretary of the canton from 1861 to 1876, but produced only a few *Novellen*. His second successful literary period extends from 1876, when he retired from office, to his death in 1890. *Der grüne Heinrich*, really a series of short stories, has many faults as a novel and was not well received. When Keller did not attempt the novel, but confined himself to the short story proper, he excelled. He was at his best in certain of the *Novellen*, which depict with wonderful insight and charming humor contemporaneous Swiss village life. Besides the works above mentioned, the most important are: *Sieben Legenden* (1872; 60th ed, 1912); *Züricher Novellen* (1878; 72d ed, 1912); *Das Sanngedicht* (1882; 60th ed, 1912)—all collections of *Novellen*, the best known of which are *Pankraz der Schmoller*, *Die drei gerechten Kamacher*, *Romeo und Julie auf dem Dorfe*, *Das Fahnlein der sieben Aufrechten*, *Kleider machen Leute* and *Dietegen*; *Gesammelte Gedichte* (1883); *Martin Salander* (1886), a novel.

Bibliography. Otto Brahm, *Gottfried Keller; ein literarischer Essay* (Berlin, 1883); J. Baechtold, *Gottfried Kellers Leben, seine Briefe und Tagebücher* (2d ed., ib., 1897); id., *Gottfried Keller—Bibliographie* (ib., 1897); F. Baldensperger, *Gottfried Keller, sa vie et ses œuvres* (Paris, 1899); F. Leppmann, *Gottfried Kellers Grüner Heinrich* (Berlin, 1902); Rudolf Fürst, *Gottfried Kellers Martin Salander* (Leipzig, 1903); Georg Leyh, *Studien zur Technik der Erzählung in den Novellen Gottfried Kellers* (Ausbach, 1903); Max Preitz, "Gottfried Keller's dramatische Bestrebungen," in *Beiträge zur deutschen Literaturwissenschaft*, No. 12 (Marburg, 1909); O. F. R. Loehrke, *Die künstlerische Bedeutung des Fremdwortes bei Gottfried Keller* (Greifswald, 1911); Agnes Waldhausen, "Die Technik der Rahmenerzählung bei

Gottfried Keller," in *Literaturhistorische Gesellschaft zu Bonn*, vol. ii (N. S., Berlin, 1911).

KELLER, HELEN ADAMS (1880-). An American writer and lecturer, blind and deaf from infancy. She was born in Tuscumbia, Ala., descended on her father's side from Alexander Spotswood, a Colonial Governor of Virginia, and connected with the Lees and other old Southern families, and through her mother related to the New England families of Adams, Hale, and Everett. When she was 19 months old, she was attacked by scarlet fever, which left her without the senses of sight and hearing. Until her eighth year no serious attempt was made to educate her. She then was placed under the care of Miss Anne M. Sullivan (Mrs. John A. Macy), who had received her training at the Perkins Institution in Boston, and who remained with Miss Keller indefinitely as companion and teacher. Miss Keller's progress was remarkable. When she had learned to read and write and to use the finger alphabet, she determined that she would learn to speak. Under the instruction of Miss Sarah Fuller, of the Horace Mann School, New York, in less than a month she was able to talk intelligibly. After studying for some years at the Worcester Normal School and at the Cambridge School, she entered Radcliffe College in 1900 and graduated in 1904. After her graduation she served on the Massachusetts Commission for the Blind and on the committees of various societies for the blind. She became widely known as a lecturer and writer on her own experiences and on the possibilities of a rich intellectual life for the deaf and blind. Her writings include, besides an autobiography: *Optimism* (1903), *The World I Live in* (1908), *The Song of the Stone Wall* (1910), *Out of the Dark* (1913). Most of these have appeared in German translations. Consult. H. A. Keller, *Story of my Life*, with her letters, 1887-1901, and a supplementary account of her education (New York, 1903); John Hitz, "Helen Keller," in the *American Anthropologist*, vol. viii (N. S., Lancaster, Pa., 1906); Gérard Harry, *Man's Miracle: The Story of Helen Keller and her European Sisters*, translated from the French (New York, 1913). *The Girl who Found the Bluebird* (ib., 1914), by Georgette Leblanc (Madame Maeterlinck), was written after a visit to Miss Keller.

KELLER, OTTO (1838-). A German classical scholar, born at Tübingen and educated at the universities of Tübingen and Bonn. He was professor at Freiburg (1872-76), at Graz (1876-81), and afterward at Prague until 1909, when he retired. His most important work was in collaboration with A. T. Holder, an edition of the text of Horace, *Horati Opera Rec. Keller et Holder* (1864-70; vol. i, 2d ed., 1899), which is the chief critical edition of Horace. On this subject he also published *Epilegomena zu Horaz* (3 vols., Leipzig, 1879-80). Important, too, for the study of Horace is his *Pseudocronis Scholia in Horatium Vetusiora, etc.* (2 vols., ib., 1902-04). Besides these, he made many contributions to learning, among which the most important are: *Tiere des klassischen Altertums in kulturgeschichtlicher Beziehung* (Innsbruck, 1887); *Tier- und Pflanzenbilder auf Münzen und Gemmen* (1889); *Lateinische Volksetymologie* (1891); *Lateinische Etymologien* (1893); *Grammatische Aufsätze* (1895); *Kulturgeschichtliches aus der*

Tierwelt (1904); *Die antike Tierwelt*, vols. i, ii (1909, 1914).

KEL/ERMAN, WILLIAM ASHBROOK (1850-1908). An American botanist, born at Ashville, Ohio. He graduated at Cornell (1874) and received his Ph.D. at Zurich (1881). For five years he was natural-science master in the State Normal School of Wisconsin, then professor of botany and zoölogy in the Agricultural College of Kansas, as well as State botanist there; and he wrote a pamphlet upon the flora of Kansas. From 1891 until his death he was professor of botany in Ohio State University, which published his *Catalogue of Ohio Plants* (1899), the fourth it had issued, with a supplement the following year, and also *The Non-Indigenous Flora of Ohio* (1900), which he prepared with the assistance of his wife. He founded the *Journal of Mycology* in 1885.

KELLERMANN, kē'ēr'mān', FRANÇOIS CHRISTOPHE, DUKE OF VALMY (1735-1820). A French general, born near Rothenburg, Bavaria. In 1752 he entered the French army, served through the Seven Years' War and in the Polish expedition of 1771, and had risen to the rank of a *maréchal de camp* before the Revolution broke out. He warmly espoused its cause in 1788, and in 1792 he received the command of the Army of the Centre. Acting with Dumouriez, Kellermann repelled the Duke of Brunswick and delivered France, in the famous cannonade of Valmy (Sept. 20, 1792). He then commanded the Army of the Alps, but on allegation of treason against the Republic he was imprisoned for a year and only liberated by the fall of Robespierre. He afterward rendered important services in Italy, and was created marshal of France in 1804 and Duke of Valmy in 1809. After 1812 he commanded the reserves in Germany. In 1814 he voted for the deposition of Napoleon and at the Restoration attached himself to the Bourbons. He was created a peer in 1814 and in his subsequent political activity voted with the Liberals. He died Sept. 12, 1820. Consult J. G. P. de Salos, *Fragments historiques sur M. le maréchal de Kellermann* (Paris, 1807), and De Bolidoux, *Esquisse de la carrière militaire de F. C. Kellermann* (ib., 1817).

KELLERMANN, FRANÇOIS ETIENNE, DUKE OF VALMY (1770-1835). A French general. He was the son of Gen. François Christophe Kellermann (q.v.) and was born at Metz, Aug. 4, 1770. He entered the army at an early age, being attached to the army of the First Consul. In 1796 he was Napoleon's adjutant general in Italy, and in 1797 was made brigadier general. At Marengo (q.v.) in 1800 he decided the day by a charge of heavy cavalry and was made a general of division shortly afterward. He again distinguished himself at Austerlitz (1805) and after 1807 took part in the Peninsular campaigns. On Napoleon's return from Elba in 1815, he was in command of the royal troops sent to oppose him, but ended by offering his services to the Emperor. At the battle of Waterloo he distinguished himself by a brilliant and successful cavalry charge against the English, which would probably have changed the result of the battle but for the lack of forces to support the move. He was one of the most distinguished cavalry leaders of the First Empire, although his merits were not always recognized during his lifetime. He sat in the Chamber of Peers after the death of his father,

whose liberal opinions he shared. At his death, which took place June 2, 1835, he left a collection of memoirs which, though never published, have been used by his son, François Christophe Edouard (1802-68), in his *Histoire de la campagne de 1800* (Paris, 1854).

KELLEY, BENJAMIN FRANKLIN (1807-91). An American soldier, born in New Hampton, N. J. At the age of 19 he went to Wheeling, Va. Upon the outbreak of the Civil War he enlisted the First West Virginia Regiment for the Federals and was made its colonel. His first service was at Philippi, where he captured the Confederate camp equipage and was himself badly wounded. He was made brigadier general of volunteers in 1861, was victorious at Romney and Blue's Gap, and afterward commanded a division of 10,000 men in the Department of Harper's Ferry. In 1862 he was serving under General Frémont, and the following year he was in command of the West Virginia Department and pursued General Lee, while in 1864 he checked the enemy at Cumberland, Md., New Creek and Morefield, Va. He was brevetted major general of volunteers in 1864 and after the peace was appointed internal-revenue collector and in 1873 examiner of pensions.

KELLEY, EDGAR STILLMAN (1857-). An American composer, born at Sparta, Wis. He studied with Merriam, Clarence Eddy, and Ledochowski in Chicago (1874-76) and afterward at Stuttgart with Seifriz, Krüger, Speidel, and Finck, the celebrated organist, graduating from the conservatory in 1880. Upon his return he held several Church appointments and for a short period conducted a comic opera. Later he taught in San Francisco, where he became musical critic of the *San Francisco Examiner*. In 1896 he settled in New York, teaching in the New York College of Music and lecturing for the extension department of New York University in 1901-02. He contributed to leading musical journals and magazines. From 1906 to 1912 he lived in Berlin. When he returned to the United States, he became professor of music at the Western College for Women in Columbus, Ohio, and professor of composition at the Cincinnati Conservatory of Music. He became a member of the National Institute of Arts and Letters. His works include a comic opera, *Puritania*; two symphonies, an orchestral suite, *Aladdin* (on Chinese themes); a piano quartet, a string quartet, incidental music to *Ben Hur*, *Prometheus Bound*, *Macbeth*; songs, piano pieces. As an author, he attracted attention through his book *Chopin the Composer* (1913), a scholarly analysis of the master's works.

KELLEY, FLORENCE (1859-). An American social worker. She was born in Philadelphia, a daughter of William Darragh Kelley, and graduated from Cornell University in 1882 and from the law department of Northwestern University in 1894. She married, but divorced her husband, and was afterward known as Mrs. Kelley. She served as State inspector of factories in Illinois in 1893-97, was American editor of the *Archiv für Sozialgesetzgebung* in 1897-98, and after 1899 held the general secretaryship of the National Consumers' League. She translated Frederick Engel's *Condition of the Working Class in England*, edited Edmond Kelly's *Twentieth Century Socialism* (1910), and is author of *Some Ethical Gains through Legislation* (1905), *The Fate*

of Felix Brand (1913), *Modern Industry in Relation to the Family* (1914).

KELLEY, WILLIAM DARRAH (1814-90). An American politician, born in Philadelphia. Orphaned young, he was apprenticed first to a printer, and then to a jeweler in Boston, where from 1835 to 1840 he was engaged in business for himself. He returned to Philadelphia in 1840, studied law, was admitted to the bar in 1841, was elected prosecutor for the city of Philadelphia in 1845, and from 1846 to 1856 was judge of the Philadelphia Court of Common Pleas. Though he had been for years a Democrat and free trader, he joined the Republican party in 1856 and in 1860 was sent as a delegate to the Chicago Convention which nominated Lincoln. In the same year he was elected to Congress, where he soon became conspicuous as an advocate of protection and the abolition of slavery and as an opponent of the demonetization of silver. He served in Congress until his death. For many years, as the oldest member in consecutive service, he was called the Father of the House, and by his enthusiastic and persistent championship of the Pennsylvania pig-iron interests he earned the sobriquet of Pig-Iron Kelley. He was a voluminous writer and, in addition to numerous political addresses, published *Reasons for Abandoning the Theory of Free Trade and Adopting the Principle of Protection to American Industry* (1872), *Letters on Industrial and Financial Questions* (1872), *Letters from Europe* (1880), *The Old and the New South* (1887).

KELLEY, WILLIAM VALENTINE (1843-). An American Methodist Episcopal clergyman and editor, born at Plainfield, N. J. He graduated from Wesleyan University in 1865 and entered the ministry in 1867. After serving several important pastorates he was elected editor of the *Methodist Review* of New York in 1893. He was a member of the general conferences of 1896, 1900, 1904, 1908, and 1912; became vice president of the board of missions of his church, and wrote *The Ripening Experience of Life and Other Essays* (1907); *Down the Road and Other Essays* (1911); *The Illumined Face* (1911). *Glances of the Soul of Gilder* (1911).

KELLGREN, kyél'grän, JOHAN HENRIK (1751-95). A Swedish lyric poet, born at Floby Prestgård, West Gothland. He was educated at Skara and at the Abo University, where he became a privatdocent in 1774. He afterward taught privately in a noble family at Stockholm, where he met Gustavus III, and by 1778 he had begun to write for the *Stockholmsposten*, of which he afterward became joint editor. His keen critiques and his poems, inspired by the prevailing French æstheticism, attracted the attention of this King, who made Kellgren his librarian and private secretary and in 1786 nominated him to the Swedish Academy. Kellgren's satirical humor is displayed in his original poems, *Mina lojen* (My Jests) and *Lyusets fiender* (The Enemies of Light), while he excelled all his Swedish predecessors in such lyrics as *Nya skapelsen* (The New Creation) (1790), *Sigvart och Hulma*, and *Till Kristina* (1792). His *Samlade skrifter* (collected works) were published in three volumes (1796). The influence of the French Revolution, drawing him away from his earlier models, is apparent in his patriotic song *Kantaten 1 januari 1789*.

KELLOGG, WILLIAM ERSKINE (1878-). An American biologist. Born at Buffalo, N. Y., he graduated from Ohio State University in 1898 and studied at Columbia University (Ph.D., 1904), where he taught zoology (Barnard College) from 1901 to 1906. In the latter year he became professor of biology at Goucher College, Baltimore, and in 1908 a member of the teaching staff at the Marine Biological Laboratory, Woods Hole, Mass. His investigations deal largely with vertebrate morphology and embryology, and his publications include: *Social Direction of Human Evolution* (1911); *Text-Book of General Embryology* (1913); *Outlines of Chordate Development* (1913).

KELLNER, MAX (1861-). An American Semitic scholar, born at Detroit, Mich. He graduated from Hobart College in 1881 and from Harvard University (A.B.) and the Cambridge Theological School in 1885. At the latter institution he was instructor in Hebrew (1887-91), assistant professor (1891-98) and professor (1898-1907) of Old Testament language, and professor of the literature and interpretation of the Old Testament after 1907. His writings include: *The Prophecies of Isaiah* (1895); *The Standard Inscription of Ashurnasirpal* (1895); *The Assyrian Monuments Illustrating the Sermons of Isaiah* (1900); *An Outline Study on the History of the Hebrews* (1901); *An Outline Study on the Old Testament Literature and Religion* (1902).

KELLOGG, CLARA LOUISE (1842-1916). An American dramatic soprano, a daughter of George Kellogg, born at Sumterville, S. C. She was educated in New York, where she made her debut in 1861. Her principal American tours took place between 1868 and 1872, after which she filled an engagement in London, sang in Italian opera in the United States, and in 1874 organized her own opera company in English, for which she practically made her own translations and adaptations of libretti, was her own stage manager and chorus master, and on occasion the vocal and dramatic instructor of her principals. She had a wide repertoire and was a thorough mistress of her art. She married Carl Strakosch in 1887 and soon afterward retired from the stage. In 1913 she published her memoirs under the title *Memoirs of an American Prima Donna* (New York).

KELLOGG, FRANK BILLINGS (1856-). An American lawyer. He was born at Potsdam, N. Y., but removed to Minnesota in 1865 and there received a common-school education. Admitted to the bar in 1877, he served as city attorney of Rochester, Minn., for three years, and as county attorney of Olmstead County for five years. Moving to St. Paul in 1887, he formed a partnership with Senator C. K. Davis and C. A. Severance and became general counsel for various railroad and mining companies. He was special counsel for the United States in cases against the paper and Standard Oil trusts and in the suit of the government to prevent the Union Pacific and Southern Pacific merger, and for the Interstate Commerce Commission in the investigation of the Harriman railroads. In 1912 he was elected president of the American Bar Association.

KELLOGG, GEORGE (1812-80). An American inventor. He was born at New Hartford, Conn., graduated at Wesleyan in 1837, and from 1838 to 1841 was principal of an academy at

Sumterville, S. C. He was for some time a manufacturer in Birmingham, Conn., and was in the United States revenue service from 1863 to 1866. He established factories in England, was a patent expert, and patented a machine for making jack chains (1844), a dovetailing machine (1849), a type-distributing machine (1852), and improved surgical instruments (1853). He was the father of Clara Louise Kellogg.

KELLOGG, JOHN HARVEY (1852-). An American physician, born at Tyrone, Mich. He studied at State Normal School, graduated from Bellevue Hospital Medical College in 1875, and thereafter practiced at Battle Creek, Mich., where he became superintendent of the Battle Creek Sanitarium in 1876. He invented several medical and surgical instruments and experimented with processes to improve cereal foods. He founded and became president of the American Medical Missionary College. Besides papers and articles, he wrote: *The Art of Massage* (1895), *Rational Hydrotherapy* (1901, 4th rev. ed., 1910); *The Home Book of Modern Medicine* (1906), *The Battle Creek Sanitarium, History, Organization, Methods* (1908, 1913); *Life, its Mysteries and Miracles* (1910), *Neurasthenia, or Nervous Exhaustion* (1914).

KELLOGG, MARTIN (1828-1903). An American classical scholar and educator, born at Vernon, Conn. He graduated at Yale in 1850. After 10 years of service in the College of California, in 1860 he became professor of Latin and Greek in the university of that State. In 1876 he was transferred to the chair of Latin language and literature, and from 1890 to 1899 he was president of the university. His administrative policy resulted in an important growth in the institution. He edited *His Oratoria, Selections from Cicero and Quintilian* (1872) and *The Brutus of Cicero* (1889).

KELLOGG, PAUL UNDERWOOD (1879-). An American social worker and editor, born at Kalamazoo, Mich. He was a reporter on, and city editor of, the *Kalamazoo Daily Telegraph* between 1898 and 1901, took special courses at Columbia University in 1901-06 and at the New York School of Philanthropy in 1902, and after 1902 was editor of the *Survey* magazine (formerly *Charities and the Commons*). This periodical became widely known under his editorship for its accurate and judicial reports upon social and labor conditions in various parts of the United States. In 1907-08 he directed the Pittsburgh Survey, whose findings he edited in six volumes for the Russell Sage Foundation. He was a member of the board of directors of the New York City Commission on Congestion of Population and in 1910 chairman of the Commission on Occupational Standards of the National Conference of Charities and Correction. Amherst gave him an honorary A.M. in 1911.

KELLOGG, SAMUEL HENRY (1839-99). An American scholar and missionary, born at Westhampton on Long Island. Graduating from Princeton University in 1861, and three years later from Princeton Theological Seminary, he went to India as a Presbyterian missionary in 1865 and remained there 11 years. During this time he studied Hindu dialects and taught theology at Allahabad. Upon his return to the United States he became the pastor of a Pittsburgh church, then professor in the Western

Theological Seminary, and in 1886 pastor of St. James's Square Presbyterian Church in Toronto. After six years he returned to India, where he was occupied mainly with the work of translating the Bible into Hindi. His works include: *A Grammar of the Hindi Language and Dialects* (1876, 1892); *The Jews, or Prediction and Fulfillment* (1883); *The Light of Asia and the Light of the World* (1885); *From Death to Resurrection* (1885); *The Genesis and Growth of Religion* (1892).

KELLOGG, VERNON LYMAN (1867-). An American entomologist, born at Emporia, Kans. After graduating in 1889 from the University of Kansas, he studied at Cornell and abroad at Leipzig and Paris. He was assistant and associate professor of entomology at the University of Kansas from 1890 to 1894 and thereafter professor of entomology and lecturer in bionomics at Leland Stanford Junior University. His publications include *Elements of Insect Anatomy* (1889), with J. H. Comstock; *Common Injurious Insects of Kansas* (1892); *Elementary Zoology* (1901, 2d ed., 1902); *First Lessons in Zoology* (1903); *American Insects* (1905; 2d ed., 1908); *Darwinism Today* (1907); *Insect Stories* (1908); *The Animals and Man* (1911); *Beyond War* (1912), and, with David Starr Jordan, *Animal Life* (1900), *Evolution and Animal Life* (1907), and *Scientific Aspects of Luther Burbank's Work* (1909).

KELLOGG, WILLIAM PITT (1831-) An American soldier and politician, born at Orwell, Vt. He studied at the Norwich Military Institute and in 1848 removed to Illinois, where four years later he was admitted to the bar. In 1861 President Lincoln appointed him Chief Justice of Nebraska, but soon afterward, being granted a leave of absence, he raised the Seventh Illinois Cavalry and fought in the Civil War as its colonel. He was promoted to the rank of brigadier general for his services in the army under Pope in Missouri and for the ability with which he commanded General Granger's cavalry during the Corinth campaign, but in 1863 he was compelled by ill health to resign from the service. Consistently Republican in politics, he was collector of the port of New Orleans in 1865-68, United States Senator in 1868-72, Governor of Louisiana in 1873-77, and a member of Congress in 1883-85. To every Republican National Convention from 1860 to 1896 he was a delegate.

KEL/LOR, FRANCES ALICE (1873-). An American sociologist, born at Columbus, Ohio. She graduated from the Cornell Law School in 1897 and studied at the University of Chicago and at the New York Summer School of Philanthropy; was secretary and treasurer of the New York State Immigration Commission in 1909 and chief investigator for the Bureau of Industries and Immigration of New York State in 1910-13; and became managing director of the North American Civic League for Immigrants and a member of the Progressive National Committee. She is author of *Experimental Sociology* (1902); *Out of Work* (1904); *Education of Women by Athletics* (1909); *Out of Work* (1915).

KELLOW SAFETY POWDER. See EXPLOSIVES.

KELLS. A market town of County Meath, Leinster, Ireland, on the Blackwater, 9½ miles northwest of Navan, famous for its historical associations (Map: Ireland, E 4). The town

originated in a monastery founded in the middle of the sixth century by St. Columba, in which the Columban community of Iona found a refuge when that island was devastated by the Norsemen between 802 and 815. The renowned sixth or seventh century *Book of Kells*, a beautifully executed manuscript copy of the Gospels, is preserved in Trinity College, Dublin, and a fine tenth-century crossier is in the British Museum. The chief existing antiquities are St. Columba's oratory, several ancient sculptured crosses, and a round tower of the twelfth century. Pop., 1901, 2428; 1911, 2395.

KELLY, EDMOND (1841-1909). An American lawyer and Socialist. He graduated from Columbia College in 1870, was admitted to the bar, and later studied at Cambridge University. He opened a law office in Paris, where he became known as an authority on international marriages and where he served also as counsel to the American Legation. Returning to New York in 1890, he was active in municipal reform, founded the City Club, and had much to do with the election of Mayor Strong. His effort to organize workmen into good-government clubs did not succeed, and he returned to his law practice in France. There he was counsel of Princess de Sagan (Anna Gould) in the divorce suit against her husband, Count Boni de Castellane. Again in the United States in 1905, he participated actively in Socialistic propaganda and made special investigation of the tramp problem. His writings include *Evolution and Effort and their Relation to Religion and Politics* (1895; 2d ed., 1898); *Government, or Human Evolution* (2 vols., 1900-01); *The Unemployables* (1907); *Twentieth Century Socialism* (1910).

KELLY, HOWARD ATWOOD (1858-). A distinguished American gynecologist, born at Cambridge, N. J., and educated at the University of Pennsylvania, where he graduated B.A. in 1877 and M.D. in 1882, and where he was associate professor of obstetrics in 1888-89. While in Philadelphia, he founded Kensington Hospital. He was professor of gynecology and obstetrics at Johns Hopkins University from 1889 to 1899 and after the latter year—when he became also gynecological surgeon in Johns Hopkins Hospital—of gynecology alone. High attainments in his special field brought Dr. Kelly many honors—he received the degree of LL.D. from Aberdeen and Washington and Lee universities and from the University of Pennsylvania; served as president of the Southern Surgical and Gynecological Society in 1907 and of the American Gynecological Society in 1912; and was elected fellow or honorary member of English, Scottish, French, German, Austrian, and Italian obstetrical and gynecological societies. Besides contributing some 300 valuable articles to medical journals and editing, with C. P. Noble, *Gynecology and Abdominal Surgery* (vol. i, 1907; vol. ii, 1908), he published: *Operative Gynecology* (2 vols., 1899); *The Vermiform Appendix and its Diseases* (1905, 1909); *Walter Reed and Yellow Fever* (1906, 1907); *Medical Gynecology* (1908); *Myomata of the Uterus*, with I. S. Cullen (1909); *Cyclo-pædia of American Medical Biography* (1912); *American Medical Botanists* (1913); *Diseases of the Kidneys, Ureters, and Bladder*, with C. F. Burnam (2 vols., 1914).

KELLY, HUGH (1739-77). A British author and playwright, born at Killarney, Ireland.

He learned his trade as a stay maker, but at the age of 21 went to London to seek his fortune in literature. He found it in the writing of an insipidly sentimental play, *False Delicacy*, which Garrick presented at the Drury Lane in 1768. Its success was far beyond its merits. Dr. Johnson had a poor opinion of the author's gifts, and Goldsmith held him in contempt. It was in avowed rivalry with the latter's *The Good Natured Man*, which was about to appear, that Garrick brought out *False Delicacy*, which somehow so commended itself abroad as to be translated into French, German, and Portuguese. This comedy was followed by four others—*A Word to the Wise* (Drury Lane, 1770), *A School for Wives* (ib., 1773), *The Romance of an Hour* (Covent Garden, 1774), *The Man of Reason* (ib., 1776). His tragedy *Clementina* (Covent Garden, 1771), though moderately successful, had little merit. Kelly was called to the bar in 1774, but did not succeed as a lawyer and took to drink. *A Life* was prefixed to his *Works* (1778).

KELLY, JAMES EDWARD (1855–) An American sculptor, born in New York. He studied at the National Academy of Design and at first devoted himself to wood engraving, being known principally as a magazine illustrator until 1881, and his statues, while full of spirit and often excellent in portraiture, are essentially illustrations in bronze. He won the designation "the sculptor of American history" by his works, which include "Sheridan's Ride" (1878), "Paul Revere" (1882), statue, "Monmouth Battle Monument" (1883–85), with five historical panels, groups for the Saratoga Monument (1887), "Grant at Fort Donelson" (1886), "General Devens" and the Sixth New York Cavalry Monument at Gettysburg (1890), "Call to Arms" (1891), a colossal figure for the Troy Soldiers' Monument, Buford Monument at Gettysburg (1895), "Battle of Harlem Heights" (1897), a bronze relief, for Sons of the Revolution, at Columbia University, New York; and a colossal monument to commemorate the defense of New Haven (1909). He executed a series of bronze heads from sittings given by 40 generals of the Civil War, including Grant, Sherman, Sheridan, and Hancock, and a similar series for the Spanish-American War, including heads of Wheeler, Wood, Dewey, Sampson, and others. He was one of the founders of the Art Students' League.

KELLY, JOHN (1821–86). An American politician. He was born in New York City, had a common-school education, was apprenticed to a mason, and at the age of 24 started in business for himself. He soon became interested in politics, for which he had a decided aptitude, entered Tammany Hall, became a member of the Tammany General Committee in 1849, and in 1854 was elected alderman from the Fourteenth Ward. He then served in Congress from 1855 to 1858, attracting attention by his vigorous opposition to the Native American or Know-Nothing movement, and from 1858 to 1861 and again from 1865 to 1868 served as sheriff of New York County, in which capacity he accumulated a considerable fortune by taking full though legitimate advantage of the financial opportunities which this office then offered. He spent the years 1869–71 in Europe and on his return took an active part with Tilden and O'Connor in the fight against William M. Tweed (q.v.). He was called upon at

the same time to effect the general reorganization of Tammany Hall, and this he did to the satisfaction of most of the better element of the New York Democracy. Thenceforth until 1884 he was regarded as the autocrat and dictator of the Tammany organization, though there was considerable discord on several occasions, notably in 1876. He was appointed comptroller by Mayor Wickham, but was subsequently removed by Mayor Cooper. In 1879 he quarreled with Governor Robinson, the regular Democratic nominee for the governorship of the State, and, by running for that office himself on an independent ticket, successfully divided the Democratic vote and brought about the election of Alonzo B. Cornell, the Republican candidate. Kelly took an active interest in national as well as in State and city politics and in 1884 made a stubborn but unsuccessful effort to prevent the nomination of Grover Cleveland for the presidency. Though he was often accused of resorting to questionable methods to secure his ends, he was seldom charged with personal dishonesty. Consult Breen, *Thirty Years of New York Politics* (New York, 1899).

KELLY, MYRA (MRS. ALAN MACNAUGHTON) (?–1910). An American author and educator. She was born at Dublin, Ireland, came to the United States at an early age, was educated at the Horace Mann School, and graduated from Teachers College, Columbia University, in 1899. As a teacher in East Side New York schools, she gathered material for very human and sympathetic sketches of life among poor children. Originally published for the most part in magazines, these sketches were collected under the titles: *Little Citizens* (1904); *The Isle of Dreams* (1907); *Wards of Liberty* (1907); *Rosnah* (1908); *Golden Season* (1909); *Little Aliens* (1910); *New Faces* (1910); *Her Little Young Ladyship* (1911). Miss Kelly married Allan MacNaughton in 1905.

KELLY, THOMAS (1769–1853). An Irish hymn writer, born in Dublin. He graduated at Trinity College, Dublin; began the study of law, but gave it up for theology and became a clergyman of the Established church. Later he became a Congregationalist and devoted his large wealth to the work of the churches. His reputation rests upon his *Hymns*, to the number of 765, which appeared in Dublin in successive editions between 1804 and 1853, which in their day were very popular, and some of which are still used, especially "On the mountain tops appearing."

KELLY, WILLIAM (1811–88). An American inventor. He was born in Pittsburgh, Pa., was educated at the public schools, and before he was 22 years old had decisively proved his mechanical ingenuity by several inventions, chief of which was a revolving steam engine. In 1845 he went to Lyon Co., Ky., and, having engaged in the manufacture of iron, bent his energies to the problem of inventing improved processes of manufacture. His factory on the Cumberland River soon turned out a product that acquired more than a local reputation. In 1847 he began to study the problem of reducing fuel cost in the manufacture of iron and soon afterward to decarbonize molten iron by the application of an air blast, a process for which he built a converter. It is claimed in Kelly's behalf that this process, by which molten cast iron is changed into steel, was employed for some time in certain lines of steel manufacture before Sir

Henry Bessemer's process was introduced into the United States by Alexander L. Holley in 1867. Kelly's knowledge that Bessemer was patenting his process in England compelled him to apply at Washington for the protection of his own rights, and he obtained official recognition that he was the first inventor, although the application for a Bessemer patent was pending at the time. In 1863 a factory was built at Wyandotte, Mich., for the manufacture of steel by Kelly's process; but disputes which threatened protracted litigation compelled the claimants in behalf of the rival processes to consolidate their interests three years afterward. It is said that Kelly was the first to employ Chinese workmen in the United States.

KELLY-KENNY, SIR THOMAS (1840-1914) A British soldier, born at Kilrush, County Clare, Ireland. He entered the army as an ensign in 1858; served in China in 1860, taking part in the action of Sinho and the capture of the Taku forts, and participated in the Abyssinian expedition in 1867. Subsequently he held various appointments and was regularly promoted until at the outbreak of the South African War he held the rank of major general. He then proceeded to the Cape with Lord Roberts, as commander of the Sixth Division, took part in the relief of Kimberley and won the promotion to lieutenant general. At Kimberley his more conservative methods had brought him to some extent into conflict with Lord Kitchener, who, though Kelly-Kenny's junior, acquired prestige as Lord Roberts's representative. In 1901-04 Kelly-Kenny was at the War Office as adjutant general to the forces. He was knighted in 1902, was promoted to general in 1905, and was retired in 1907. A year earlier King Edward had specially singled him out for the G.C.V.O., and he received other decorations at home and abroad.

KELOID, less often, but more correctly, **CHELOID**, kē'loid (Gk. *χηλή*, *chēlē*, a claw) A benign neoplasm which appears in the skin in the form of a scarlike fibrous tumor. It is probably always due to an injury, at whose site it appears, though formerly it was believed that true keloid arose spontaneously, while false keloid followed injury. Keloid has been known to follow pressure of clothing, a scratch, a vaccination wound, a boil, a leech bite, an acne pustule, a smallpox pustule, and an incision in the lobule of the ear made for an earring. Certain persons are predisposed to scarring and to keloid, small injuries being followed by the disease. This statement is true of the negro race. It is not uncommon to see negroes with large numbers of keloids of varying sizes. The keloid is usually an elevated, rounded, firm, flat tumor with sharply defined edges projecting about one-eighth of an inch above the level of the skin and generally appearing on the face, ears, back, shoulders, or breasts. Occasionally it has the form of a ridge. It is of a glistening white or red color, smooth on its surface, devoid of lanugo hairs, and often slightly sensitive to pressure. Rarely keloids weighing over 15 pounds are encountered.

Upon section the tumor appears to be fibrous, with a few nuclei and spindle cells chiefly about the blood vessels. It is thought that keloid develops from abnormal growth of the adventitia of the arterioles. Clawlike processes project from the tumor into the neighboring skin, and there are changes in the walls of blood vessels

for some distance beyond the edge of the keloid. The tumor usually progresses up to a certain point and then remains stationary. A few cases recover spontaneously, the tumor undergoing slow atrophy. The growth is almost sure to return after cauterization or excision. If the latter is practiced, thorough removal of surrounding tissue must be made. As palliatives of the pain or itching, mercurial applications, lead, salicylated plaster, resorcin, and pressure have been used. Linear scarifications and electricity have also been employed.

KELOWNA. A city in the Yale and Cariboo District, British Columbia, Canada, on Okanagan Lake, 80 miles south-southwest (direct) of Sicamous, on the Canadian Pacific Railway (Map British Columbia, E 5). There is a daily Canadian Pacific Railway steamer service to the railway terminus at Okanagan Landing, 28 miles distant. There are a general hospital, exhibition building, and race track. The city owns a park, its electric light and power plants and its water works. Among the industrial establishments are saw and planing mills, box factories, fruit packing houses, a jam and fruit-canning factory, and water works, and cigar factory. Tobacco is grown and manufactured locally. The city is surrounded by a very rich fruit-growing district. Pop., 1911, 1663.

KELP. A name applied to certain large seaweeds, mainly Fucaceæ and Laminariaceæ, also to the crude ash obtained by drying and burning seaweed. On the coasts of Ireland, Scotland, France, and New England the term is applied mainly to species of *Fucus* and *Laminaria* and is sometimes confined to the latter genus. The extensive groves of giant kelps of the Pacific coast of America consist principally of *Nereocystis luetkeana*, *Macrocystis pyrifera*, and *Pelagophycus poria*. The commercial product known as kelp (seaweed ashes) consists of hard dark-gray or bluish masses composed mainly of common salt, sodium carbonate, sodium and potassium sulphates, potassium chloride, and potassium or sodium iodide, with a certain amount of insoluble and coloring matter. This material was formerly used to a considerable extent in the manufacture of soap and glass and as a source of crude sodium carbonate and iodine. The latter substances, however, are now obtained at a lower price and of better quality from other sources; the former from the natural salt deposits, and the latter from the by-products of the recrystallization of Chilean sodium nitrate. As a result, kelp is now prepared in far less quantity than formerly. The principal use of kelp plants, as of other seaweeds, is as a fertilizer, for which purpose they are applied mainly without further treatment than partial drying on the beach. The giant kelps of the Pacific coast have recently, however, been exploited as a source of commercial potash, especially for fertilizing purposes, on account of the high percentage of potash which they contain. These kelps contain about five times as much potash as the Atlantic seaweeds, analyses showing the wet kelps with 85 per cent of water to contain about 3 per cent of potash as potassium chloride. The iodine content is about 0.2 per cent. Consult: D. M. Balch, "On the Chemistry of Certain Algae of the Pacific Coast," in *Journal of Industrial and Engineering Chemistry* (Easton, Pa., 1909); F. K. Cameron, "Fertilizer Resources of the United States," in *United States Congress* (62d Congress, 2d Session),

Senate Document, No. 190 (Washington, 1912); "Kelp and Other Sources of Potash," in *Journal of the Franklin Institute* (Philadelphia, 1913). See IODINE; SEAWEED.

KELP CRAB. A name given on the Pacific coast to a rather large crab (*Epialtus productus*). It is used as food by the natives along the coast, but has not yet found its way into the San Francisco markets. It ranges from Puget Sound to Monterey and is said to be easily recognized by its smooth squarish shell or carapace, which bears two distinct teeth on each side. It is the most common maioid crab of California and Oregon, inhabiting rocky shores just below low-water mark.

KELP/FISH'. Any of many small fishes in various parts of the world which frequent beds of kelp near shore and whose colors as a rule protectively accord with the colors of the seaweeds. In California the name is given distinctively to several blenniid fishes of the genus *Gibbonsia*, and especially to the large related blenny, *Heterostichus rostratus*, which is caught for market. It is 16 inches long and is translucent reddish brown, marked with many patches and streaks of light and shade.

KELP GOOSE. A goose (*Chloephaga hybrida*) of the Falkland Islands and Patagonia, resembling the brant and closely allied to the Magellanic and several other species of the Southern Hemisphere.

KEL/PIE. A Scottish word denoting a water sprite, usually in the form of a horse, which was believed by the superstitious to forewarn by preternatural lights and sounds those who are destined to be drowned, or even to assist in the drowning.

KELP PIGEON. A sailor's name for the sheathbill (q.v.).

KELPS. The large brown algæ (also called devil's aprons) in the order Laminariales. See ALGÆ; PHÆOPHYCÆ; KELP.

KEL/SEY, FRANCIS WILLEY (1858-). An American Latin scholar, born at Ogden, N. Y. He graduated at the University of Rochester (1880) and studied in Europe (1883-85). From 1880 to 1889 he taught Latin at Lake Forest University, first as instructor, later as professor. Thereafter he was professor of Latin at the University of Michigan. He edited textbooks for schools, portions of many Greek and Latin authors (Xenophon, Cæsar, Cicero, Lucretius, Ovid); became joint editor with Professor Percy Gardner, of the University of Oxford, of a series of *Handbooks of Archaeology and Antiquities*; and published *Pompeii: Its Life and Art*, translated from Augustus Mau (1899; rev. ed., with new matter by Professor Kelsey, 1902). A contributor to various educational journals, in 1911 he edited *Latin and Greek in American Education*, an important collection of papers dealing with the value of the classics. In the year 1906-07 he was president of the American Philological Association and from 1907 to 1912 president of the Archaeological Institute of America.

KEL/SO. A market town and police burgh in Roxburghshire, Scotland, on the Tweed, 43 miles southeast of Edinburgh (Map: Scotland, F 4). Its trade is chiefly agricultural; it manufactures fishing tackle, manures, vehicles, cab-network, and agricultural machinery. It contains remains of the abbey of the Virgin and St. John the Evangelist, founded in 1128 by King David I, which was destroyed by the Eng-

lish in 1545. On the opposite bank of the Tweed are the ruins of Roxburgh Castle. Pop. (police burgh), 1901, 4005; 1911 3982.

KELT (Scottish). Young salmon in a certain stage of growth. See SALMON.

KEL/TIC CHURCH, LITERATURE, ETC. See CELTIC CHURCH, ETC.

KEL/TIE, JOHN SCOTT (1840-). A Scottish geographer. He was born in Dundee and was educated at St. Andrews and Edinburgh. He was for several years a publisher's editor, was inspector of geographical education for the Royal Geographical Society in 1884, its librarian in 1885, and its secretary in 1892. In 1880 he became editor of the valuable annual *the Statesman's Year Book*. He wrote: *History of the Scottish Highlands and Clans* (1874); *Report on Geographical Education* (1886); *Applied Geography* (new ed., 1908); *The Partition of Africa* (1894); *The History of Geography* (1914), with O. J. R. Howarth.

KEL/TON, JOHN CUNNINGHAM (1828-93). An American soldier, born in Delaware Co., Pa. He graduated at West Point in 1851, undertook frontier service as a lieutenant of infantry in Minnesota, Kansas, and Dakota for six years, and then returned to West Point as instructor in the use of small arms. His career in the Civil War began at St. Louis (1861), where he was a purchasing agent for the Western Department, but the same year he was made colonel of the Ninth Missouri Volunteers. In 1862 he became assistant adjutant general on the staff of Major General Halleck. For his valuable services, active and executive, he was brevetted brigadier general in the regular army (1865), and after the war was a staff colonel and assistant adjutant general at Washington, where he invented some improved rifles and revolvers that were accepted by the Ordnance Department. He published a *Manual of the Bayonet* (1861) and other works on military topics.

KELTS. See CELTIC PEOPLES.

KELUNG, kē'lung', or KILUNG. The chief seaport of Formosa (q.v.), in lat. 25° 9' N., long 121° 47' E. (Map: Japan, D 8). It lies at the head of a deep bay, which is guarded by Kelung Island, which lies about 2 miles off shore. The scenery behind the town is very striking. The harbor has been dredged and equipped to permit the accommodation of large vessels. The principal export is coal. There are a large number of coal mines in the immediate neighborhood. Gold and sulphur are also mined near by. Kelung is connected by rail with Dai-hoku (in Chinese, Tai-peh) and Kagi, the capital, and with Shin-chiku, 63 miles farther south, and is connected with Tamsui via Dai-hoku. Pop., 1908, 17,100.

KELVIN, WILLIAM THOMSON, first BARON (1824-1907). A Scottish British physicist. He was born at Belfast, June 26, 1824, the son of James Thomson, who was later professor of mathematics at Glasgow. He graduated in 1845 from St. Peter's College, Cambridge, and shortly afterward was elected fellow. He became professor of natural philosophy in the University of Glasgow in 1846, in which position he continued until 1899. While an undergraduate he published a paper *On the Uniform Motion of Heat in Homogeneous Solid Bodies and its Connection with the Mathematical Theory of Electricity*, which was favorably received by scientists. He was for some time editor of the *Cambridge Mathematical Journal* and was the

first editor of the *Cambridge and Dublin Mathematical Journal* which succeeded it, some of his most brilliant discoveries having appeared in these journals during a period of 65 years. He also contributed to the *Comptes Rendus*, the *Transactions* and *Proceedings* of the Royal Societies of London and Edinburgh, and various other journals. In the mathematical theories of elasticity, vortex motion, heat, electricity, and magnetism, his discoveries were notable. Lord Kelvin, who was the electrical engineer for the Atlantic cables of 1857-58 and 1865-66, made many very valuable improvements in signaling apparatus—he invented the mirror galvanometer used for cable signaling, devised the siphon recorder still in use for receiving the signals, and from his study of the properties of the cable made an observation (borne out in more than a half century of practice) that a limit to the speed of operation would early be reached owing to the effect of the statical capacity.

Lord Kelvin acted as engineer for several other cable companies; invented many pieces of electrical apparatus and methods for measurement, and developed an improved form of mariners' compass free from the magnetic action of the iron of the ship, and a deep-sea sounding apparatus, both of which are in widespread use. Lord Kelvin's work in thermodynamics was also of the greatest value, for it was he who first appreciated the importance of the doctrine of the conservation of energy as enunciated by Joule and who developed Carnot's work on heat so that it would harmonize with the new theory then being generally accepted; a paper *On an Absolute Thermometric Scale* contains much that is now considered fundamental in thermodynamics. Even as early as 1842 Lord Kelvin had published a paper containing the germ of his theories on the age of the earth, and this subject he constantly discussed and elaborated. He was also greatly interested in the problems resulting from the discovery of radium and the theory of electrons. His many papers, contributed to scientific journals, were collected in book form as follows: *Reprint of Papers on Electricity and Magnetism* (1872); *Mathematical and Physical Papers* (6 vols., 1882-1911); *Popular Lectures and Addresses* (3 vols, 1891-94). With Prof. P. G. Tait he collaborated on *Elements of Natural Philosophy* (1873), later called *A Treatise on Natural Philosophy*.

Lord Kelvin attended the meeting of the British Association held in Montreal in 1884, and afterward he visited Baltimore and delivered at Johns Hopkins University a course of lectures, published in 1904 as *Baltimore Lectures on Molecular Dynamics and the Wave Theory of Light*. In 1897, while in America for the Toronto meeting of the British Association, he visited several leading universities of the United States, and in 1902 he came again. For his work in connection with the Atlantic cable he was knighted in 1866, and in 1892 he was raised to the peerage. Honors from governments, scientific societies, and universities came to him from all over the world. He was the first to be awarded the Order of Merit (1902); he held the Grand Cross of the Victorian Order and the Prussian Order "Pour le Mérite," and was a Grand Officer of the Legion of Honor; and served as president of the British Association (1871), of the Royal Society, London (1890-95), and of the Royal Society, Edin-

burgh (four times). In 1896 there was a notable celebration at Glasgow of his jubilee as professor. Retiring three years later, he maintained his connection with the university as a research student and in 1904 was made chancellor. Lord Kelvin represented the highest type of physicist, since he combined powers of mathematical reasoning with the inventive faculty and manipulative skill of a great experimentalist. His interest and unflagging activity continued to the time of his death, which occurred Dec. 17, 1907, at his residence, Netherhall, near Largs, Scotland. Consult Andrew Gray, *Lord Kelvin* (New York, 1908), Elizabeth King (Lord Kelvin's sister), *Lord Kelvin's Early Home* (ib, 1909), S. P. Thompson, *Life of William Thomson, Baron Kelvin of Largs* (ib, 1910).

KEMBLE, kēm'b'l, ADELAIDE (1814-79). An English opera singer and author. Of a famous dramatic family, being a daughter of Charles Kemble (q.v.), niece of Mrs. Siddons, and the sister of Fanny Kemble, she devoted herself to musical studies and began public life with great promise as an operatic singer. Her English début was at Covent Garden in *Norma* (1841), after she had already appeared in several Italian cities with ever-increasing celebrity. In 1843, after a short though brilliant professional career, she married Mr. Edward Sartoris, an Italian gentleman of fortune, and retired to his estates in Italy. She published *A Week in a French Country House* (1867) and other literary work. In May, 1874, her son, Algernon Charles Sartoris, married the daughter of President Grant. Consult Fanny Kemble (Mrs. Butler), *Record of a Girlhood* (London, 1878) and *Records of Later Life* (ib, 1882).

KEMBLE, CHARLES (1775-1854). An English actor, the youngest son of Roger Kemble (q.v.). Born at Brecon, in South Wales, Nov. 25, 1775, he received his education, like his brother, John Philip (q.v.), at Douai, and like him also, on his return to England, devoted himself to the stage. In April, 1794, he made his first appearance at Drury Lane as Malcolm, his brother playing Macbeth. In the course of his career he played a great variety of characters with steadily growing success, being in his earlier parts overshadowed by his elder brother's reputation. Among his best rôles were Charles Surface, Dorincourt in *The Belle's Stratagem*, Mercutio, Laertes, Macduff, and Mirabel. Macready's epigrammatic characterization of him is well known—"A first-rate actor in second-rate parts." He married in 1806 the actress Marie Thérèse De Camp. In 1832-34 he visited America with his daughter Fanny and made a great sensation. He retired from the stage in April, 1840, and died Nov. 12, 1854.

Bibliography. Oxberry, *Dramatic Biography* (London, 1826); Fitzgerald, *The Kembles* (ib., 1871); Fanny Kemble, *Record of a Girlhood* (ib., 1878); Lane (ed.), *Charles Kemble's Shakespeare Readings* (2d ed., ib., 1879); Matthews, *Actors and Actresses of Great Britain and the United States*, vol. 11 (New York, 1886); Doran, *Annals of the Stage*, edited by Lowe (London, 1888).

KEMBLE, EDWARD WINDSOR (1861-). An American illustrator. He was born in Sacramento, Cal., and studied a short time at the Art Students' League, New York, but was mainly self taught. He began early to draw for the *Daily Graphic*, then for the *Century*,

Saxon period under the title of *Codex Diplomaticus*, and in 1849 appeared his *The Saxons in England*—a work which was never completed, but which remained, up to the time of the publication of Bishop Stubbs's *Constitutional History*, the chief authority for the study of the history of England before the Norman Conquest.

KEMBLE, JOHN PHILIP (1757-1823). An eminent English actor, the eldest son and second child of Roger Kemble (q.v.). Born at Prescott in Lancashire, Feb. 1, 1757, he was educated chiefly at a Roman Catholic seminary in Staffordshire and at the English College of Douai in France. Though intended for the Church, on his return to England he adopted the stage as his profession, making his first appearance at Wolverhampton in 1776. On Sept. 30, 1783, he first appeared at Drury Lane in *Hamlet*—always a favorite character of his—and in 1788 he succeeded to the management of that theatre, where his elder sister, Mrs Siddons (q.v.), was for some years the leading actress. After the destruction of the building by fire Kemble raised a new one, which was opened in 1809. In June, 1817, he retired from the stage, and a few days thereafter a public dinner was given him, for which Thomas Campbell composed his *Valedictory Stanzas to J. P. Kemble, Esq.* He finally took up his residence in Switzerland, where he died on Feb. 26, 1823. His wife, Priscilla Kemble, an actress of ability, whom he had married in 1787, survived him. Kemble was a great tragedian and a man of character. He loved to personate, with his commanding figure and sonorous voice, the loftier heroes of the drama—kings, prelates, heroes. He was especially successful in Brutus, Wolsey, Macbeth, and Coriolanus. Consult Boaden, *Memoirs of the Life of John Philip Kemble, Esq.* (London, 1825); FitzGerald, *The Kembles* (ib., 1871); Lewes, *On Actors and the Art of Acting* (ib., 1875); Baker, *English Actors from Shakespeare to Macready* (New York, 1879); Doran, *Annals of the Stage*, edited by Lowe (London, 1888).

KEMBLE, MARIE THÉRÈSE DE CAMP (1774-1838). An actress, born at Vienna, Austria, of a theatrical family, brought to England when a child, and in 1806 married to Charles Kemble (q.v.). She continued on the stage with her husband, but retired in 1819, except for an appearance with her daughter Fanny in 1829. She was the author of several dramatic pieces, among them *The Day after the Wedding*, an interlude.

KEMBLE, ROGER (1721-1802). The founder of the English family of actors bearing his name, of which his daughter Sarah (see SIDDONS, SARAH) and his son John Philip (see KEMBLE, JOHN PHILIP) are the most celebrated. He was the head of an itinerant company of players and an actor of some ability. He married in 1753 Sarah Wood, an actress, by whom he had 12 children. Consult FitzGerald, *The Kembles: An Account of the Kemble Family* (London, 1871).

KEMBLE PLAYS. The name given to a valuable collection of English dramas made by the tragedian John Philip Kemble (q.v.) and now in the library of Devonshire House, London. It includes the first editions of Shakespeare's plays.

KEMÉNY, kə'mā-ny', ZSIGMOND, BARON (1816-75). An Hungarian novelist and political writer, born in Nagy-Enyed, Transylvania,

and educated at the Nagy-Enyed College. His first and most important historical novel, *Gyulai Pal*, was published in five volumes in 1846. Two years afterward he was in Budapest, assistant editor of the *Pesti Hírlap*, and a deputy to the National Assembly on the side of Kossuth. In 1851 he became editor of the influential political journal, the *Pesti Napló*. His historical novels, *Férj és nő* (1852), *Szív orvénnyel* (1854), *Az özvegy és leánya* (1856), and *Zord ido* (1857), are masterpieces of psychological interpretation. Kemény's essays were collected in two volumes under the title *Studies* (1870).

KEMEYS, kēm'ēs, EDWARD (1843-1907). An American wild-animal sculptor, born at Savannah, Ga., and educated in the New York public schools. During the Civil War he served in the Union army, becoming captain of artillery. Afterward he studied civil engineering. He had always been especially interested in wild animals, and a long stay in the backwoods of Illinois had made him acquainted with many of them. While a member of an engineering party engaged in laying out Central Park, New York, the sight of an artist modeling a wolf's head determined him to become a sculptor. He worked with great enthusiasm, spending much of his time in the West studying wild animals and Indians. In 1877 he went abroad, familiarized himself especially with the work of Barye, in Paris, and became a friend of Josef Wolf, the German animal painter, whose influence upon him is evident. His "Bison and Wolves" was favorably received at the Salon of 1878. Returning to New York, he produced in the intervals between his hunting trips his "Still Hunt," Central Park, New York; "Wolves," Fairmount Park, Philadelphia; "Panthers and Deer," "Raven and Coyote." In 1892 he modeled a number of large groups for the Columbian Exposition at Chicago, which led to his commission for the large bronze lions at the entrance of the Chicago Art Institute and for the fountain, "The Prayer for Rain," in Champaign, Ill. After eight years' residence in Chicago he moved to Arizona, where he did some of his best work in the form of small bronzes (now in the Chicago Art Institute and the National Gallery at Washington). The last five years of his life Kemeys passed in Washington, D. C., where he modeled the hoyden bears that flanked the entrance of the Missouri State Building at the St. Louis Exposition. His creations are insistent with personality and with the mystery of animal life, and while his technique is powerful and harmonious, the method is always lost in the result. Consult Leila Mechlin, in the *International Studio* (New York, July, 1905).

KEMMERER, EDWIN WALTER (1875-). An American economist, born at Scranton, Pa. He graduated from Wesleyan University (Conn.) in 1899 and from Cornell University (Ph.D.) in 1903. He was instructor in economics at Purdue University in 1901-03 and served as financial adviser to the United States Philippine Commission in 1903, as chief of the division of currency of the Philippine Islands in 1904-06, and as special commissioner of the Philippine government to Egypt in 1906. He then returned to Cornell to be assistant professor of political economy in 1906-09 and professor of economics and finance from 1909 to 1912, when he accepted a corresponding chair at Princeton. He was managing editor of the *Economic Bulletin* in 1907-10 and associate editor of the *American*

Economic Review after 1911. Besides his official reports, he is author of *Money and Credit Instruments in their Relation to General Prices* (1907; rev. ed., 1909).

KEMNITZ, kēm'nīts. See CHEMNITZ.

KEMP, JAMES FURMAN (1859-). An American geologist, born in New York City. He graduated from Amherst College in 1881 and from the Columbia School of Mines (E.M.) in 1884, and at Columbia became adjunct professor of geology in 1891 and professor in 1892. In addition he served as geologist of the United States and New York State geological surveys (making special investigations of the geology of the Adirondack Mountains), and as manager and scientific director of the New York Botanical Gardens (after 1898), and he lectured on geology at Johns Hopkins, Massachusetts Institute of Technology, and McGill. Amherst gave him an honorary Sc.D. in 1906 and McGill an LL.D. in 1913. He was twice president of the New York Academy of Sciences and in the year 1912-13 president of the American Institute of Mining Engineers. His publications include *Ore Deposits of the United States and Canada* (1893; 3d ed., rewritten, 1900) and *Handbook of Rocks* (1896; 5th ed., 1911), besides numerous articles, reports, and monographs.

KEMPE, kēmp, ANN ELIZA. See BRAY, ANN ELIZA KEMPE

KEMPE, HARRY ROBERT (1852-). An English electrical engineer. He was educated at Westminster School and at King's College, London, and then for three years was assistant to Sir Samuel Canning. He worked under other pioneers of the British telegraph service, especially Sir Charles Wheatstone and Sir W. H. Preece. He was electrician to the Postal Telegraph Department and, upon the Post Office taking over the telephone service in 1913, became electrician to that office. He wrote on telegraphy, telephony, and pneumatic dispatch and published a *Handbook of Electrical Testing* (1876; 7th ed., 1908), *The Electrical Engineer's Pocket Book* (1890), and *The Engineer's Year Book* (1894 et seq.).

KEMPELEN, kēm'pē-lēn, WOLFGANG VON (1734-1804). An Austrian mechanic and inventor. He was born at Pressburg in Hungary and obtained celebrity as the deviser of an automaton chess player with which he traveled over a good part of the world. The chess player was destroyed in 1854 by fire in Philadelphia. It was alleged that a human being was concealed in the figure, and a lively controversy arose over the question. Kempelen also produced a complicated figure which articulated certain words distinctly, resembling the voice of a child of three to four years. To explain its construction he published the *Mechanismus der menschlichen Sprache* (1791).

KEMPENEER, kēm'pē-nār, PETER DE (1503-80), called in Spain, PEDRO CAMPAÑA, in his paintings, PETRUS CAMPANIENSIS, or PETRUS KAMPANIA. A Flemish religious painter and tapestry designer. He was born in Brussels, but at the age of 27 went to Italy, where he visited Venice under the patronage of Cardinal Grimani, for whom he painted several pictures. At Bologna he helped paint the decorations of the triumphal arch erected for the reception of the Emperor Charles V. After 10 years' study and work in Italy he went to Spain and labored for 25 years in Seville. His masterpiece is the "Descent from the Cross" (c.1548), now in the

cathedral, where are also his "Purification" and "Resurrection," all good both in design and color. Returning to Brussels, he became the Duke of Alba's chief engineer and on May 27, 1563, was appointed by the city successor to Michel Coxie as art director and maker of cartoons for the Brussels tapestry works at a salary of 50 gulden. Although not without merit as a painter, Kempeneer is a strong mannerist, imitating now Michelangelo, now Raphael, now the Spanish primitives, and he possesses little originality. His "Christ Preaching in the Temple" is in the National Gallery, London.

KEMPER, JAMES LAWSON (1823-95). An American soldier in the Confederate service, born in Madison Co., Va. He graduated at Washington College in 1842 and served through the Mexican War. After his return he entered politics and was a member of the State Legislature for 10 years, during two of which he was Speaker. After the secession of his State he entered the Confederate service as colonel of the Seventh Virginia, which he commanded at the first battle of Bull Run. The next spring he was commissioned brigadier general and was engaged in the battles of Fair Oaks (May 31-June 1, 1862), Gaines's Mill (June 27-28, 1862), South Mountain (Sept. 14, 1862), Antietam (Sept. 16-17, 1862), Fredericksburg (Dec. 13, 1862), and Gettysburg (July 1-3, 1863), where his brigade formed part of Pickett's division. During the charge he was seriously wounded and thereafter was not in active service. On March 1, 1864, he was commissioned major general. After the war he became a planter in Madison County, and in 1874-78 he was Governor of Virginia.

KEMPER, REUREN (1770-1826). An American soldier and adventurer, born in Fauquier Co., Va. He received a fair education from his father, a Baptist clergyman, and in 1800, with the rest of the family, removed to Ohio. Subsequently, with one of his brothers, he removed to Mississippi Territory, where he became a surveyor. There for several years he was one of the most active of the conspirators who made successive attempts to overthrow the Spanish government in west Florida. In 1808 he led an unsuccessful expedition against Baton Rouge and in 1810 against Mobile. Two years later he raised a force of 600 Americans to assist Gutierrez and Toledo in the revolt in Mexico, but after a short service in Texas, where they met with some success, the force disbanded and returned to the United States. In 1815 Kemper distinguished himself at the battle of New Orleans, where he commanded a company of volunteers. The remainder of his life he spent quietly as a planter in Mississippi.

KEMPERHAUSEN, kēm'pēr-hou'zen. The nom de plume of Robert Pearce Gillies in contributions to *Blackwood's*

KEMPF, LOUIS (1841-). An American naval officer, born in Belleville, Ill. He entered the Naval Academy in 1857 and in the Civil War served in the blockade of Charleston, in the battle of Port Royal (1861), in the expedition against Port Royal Ferry, in the bombardment of Sewell's Point (1862), and along the coast throughout the war. Promoted to be captain in 1891, he commanded the receiving ship *Independence* from 1896 until 1899, when he received the grade of rear admiral and became commandant of the Mare Island Navy Yard. While squadron commander of the Asiatic Fleet

(1900-02), he declined to join foreign admirals in the bombardment of the Taku forts (during the Boxer troubles, 1900), but helped to protect Americans. In 1902-03 he was commandant of the Pacific Naval District and in the latter year was retired, but in 1904-05 he served on special duty.

KEMPIS, THOMAS À (c.1380-1471). A mediæval ecclesiastic, now almost universally recognized as the author of the *Imitation of Christ* (q.v.). His family name was Hemerken, sometimes Latinized into Malleolus (little hammer), though he is usually known by the title given above, from his birthplace, Kempen, in the Lower Rhine District. He was educated at Deventer, partly by the Brothers of the Common Life (q.v.). In 1399 he entered the Augustinian convent at Mount St. Agnes, near Zwolle, and took the vows in 1406, being ordained priest in 1413. In 1425 he became subprior, and there is a notice of his reelection in 1448. He wrote sermons, books for the young, biographies, and a history of his monastery, besides the *Imitation of Christ*. Nearly all his uneventful life was passed in this secluded convent, where he died in 1471. His remains, after two or three removals, were in 1897 placed in St Michael's Church at Zwolle, beneath a splendid monument.

Bibliography. The first edition of his works appeared in Utrecht in 1473, the first English translation in London in 1502. One of the best of the early editions was that by H. Sommalus, published in Antwerp in 1607; the latest edition is by M. J. Pohl (8 vols., New York, 1904-10). A good recent English translation is by Wilfred Raynall, from the Latin edition of 1556 by Richard Whytford (New York, 1909). Consult also: Kettlewell, *Thomas à Kempis and the Brothers of the Common Life* (2 vols., London, 1882); Cruise, *Thomas à Kempis* (ib., 1887); Scully, *The Life of the Venerable Thomas à Kempis* (New York, 1901); Montmorency, *Thomas à Kempis, his Age and his Book* (London, 1906); J. Williams, *Thomas of Kempen* (ib., 1909); R. Storr, *Concordance to the Latin Original of De Imitatione Christi* (Oxford, 1910).

KEMP LAND. See ENDERBY LAND.

KEMPT, SIR JAMES (1764-1854). A British soldier. He joined the army in 1783. In 1799 he took part in the Duke of York's expedition to Holland and in 1800, when Sir Ralph Abercromby sailed on his expedition to the Mediterranean and to Egypt, he was the latter's aide-camp and military secretary. After Sir Ralph Abercromby's death Kempt served during the remainder of the campaign, which ended with the siege of Alexandria. After a few years of home service he was attached to the expedition to Naples, which sailed in 1805 under Sir James Craig, and he commanded a brigade in Calabria. His most important services were in the Peninsular War, under the Duke of Wellington, to whom he was highly recommended. He was given command of a brigade in 1811 and fought at Badajoz, Vitoria, Orthez, Toulouse, and later at Quatre-Bras and Waterloo. For his services at Waterloo he was made G.C.B. in July, 1815. During 1820-28 he was Governor of Nova Scotia and in 1828-30 Governor-General of Canada. Kempt, after his return home, was made Privy Councillor.

KEMPTEN, kēmp'ten. A city of Bavaria in the District of Swabia, situated on the river Iller, 81 miles by rail southwest of Munich

(Map: Bavaria, D 5). The city consists of the old town by the river and the new or upper town, formerly the residence of the abbots of Kempen. The two were united in 1803. It contains a seventh-century abbey church, with a cupola and a fine altar, an old town hall, a museum, and a palace now used as barracks. Kempen is a place of considerable trade and carries on manufactures of cotton, machinery, woodenware, hosiery, thread, powder, mathematical instruments, paper, matches, and cheese. Pop., 1900, 18,864; 1910, 21,001. The town was made a free city in the fourteenth century. The new town was the residence of the abbots of Kempen, who ruled over a large domain. In 1803 the abbey and its territory were annexed to Bavaria, which at the same time absorbed the free city of Kempen.

KEMPTVILLE. A railway junction of Grenville Co., Ontario, Canada, 31 miles south of Ottawa on a tributary of the Rideau River and on the Canadian Pacific Railroad (Map: Ontario, J 3). It possesses a public library. Its industrial establishments include planing mills, a foundry, electric-power plant, and concrete-pipe works. Pop., 1901, 1523, 1911, 1192.

KEN, kân. A river of India. See CANE.

KEN, kên, or KENN, THOMAS (1637-1711). A prelate of the Church of England. He was born at Berkhamstead, Hertfordshire, July, 1637, educated at Winchester and New College, Oxford, became domestic chaplain to Bishop Morley in 1665, rector of Brightstone, Isle of Wight, in 1667, and prebend at Winchester in 1669. In 1675 he visited Rome with his nephew, Isaac Walton, and in 1679, on his return, after five years' absence, accompanied Mary, Princess of Orange, as her chaplain, to Holland. In 1680 he became chaplain to Charles II, whom he attended in his last illness. Shortly before his death the King nominated Ken to the bishopric of Bath and Wells (1684). He was not fully invested with the episcopal functions till after the accession of James II. For refusing to obey the order of the King to read the declaration of indulgence, he was sent to the Tower, with six other bishops (1688). Nevertheless, when the Prince of Orange ascended the throne as William III, he refused to transfer his allegiance to the new King, and James still his lawful sovereign. For this he was deprived of his bishopric (April, 1691). He died at Longleat, March 19, 1711. Bishop Ken was a man of solid and extensive learning, pure ideals, refined tastes, and wide sympathies, and in office displayed great zeal and self-devotion. He was the author of several volumes of sermons, theological treatises, and of many devotional writings. His "Morning Hymn" ("Awake, my soul, and with the sun") and "Evening Hymn" ("Glory to Thee, my God, this night") are surpassed by none in the language. The familiar doxology, "Praise God, from Whom all blessings flow," is his composition. His poetry was published in 1721. His prose in 1858. Consult: J. L. Anderson, *Life of Thomas Ken* (London, 1854); G. L. Duyckinck, *Life of Thomas Ken* (New York, 1859); E. H. Plumptre, *Life and Letters of Bishop Ken* (2 vols., London, 1890); F. A. Clarke, *Thomas Ken* (New York, 1896).

KENA. See KENEH.

KENAI, kē-ni'. A peninsula projecting from the south coast of Alaska, between Cook Inlet and Prince William Sound (Map: Alaska, J 6). It is 160 miles long, with a maximum width of

110 miles, and is connected with the mainland by an isthmus 20 miles wide. Its coasts are much indented, and there are several good harbors. The interior is mountainous and mostly barren. Gold and copper have been found, but neither metal has been as yet productively exploited. There is much coal, but attempts to develop the low-grade fields of Kachemack Bay were commercially unsuccessful. The development of the peninsula in late years has been associated with the efforts to connect Seward, a town on Resurrection Bay, an open winter seaport, by rail with Fairbanks (q v). This railroad, the Alaska Northern, was constructed and operated (72 miles) to the head of Turnagain Arm, Cook Inlet. The United States Alaskan Railway Commission has under consideration the building of a government railway with which the Alaska Northern may possibly connect. Settlements of importance on the peninsula, with population and schools in 1910, are as follows. Seward, 534, school; Kenai, 250, school; and Seldovia, 173, school.

KENDAL, or **KIRKBY KENDAL**. A municipal borough and market town in Westmoreland, England, on the Kent, 22 miles south-southwest of Appleby (Map: England, D 2). It is a straggling town, with an ancient Gothic church and a ruined castle. The name "kendals" is applied to the woolen cloths produced here, which, with carpets, worsted stockings, cottons, linsey-woolseys, doeskins, tweeds, and coat linings, are the staple manufactures of the town. Its other products include combs, cards, shoes, machinery, leather, and paper. Limestone is quarried near by, and gunpowder is made. The weekly market is the chief one for corn and provisions in the county. The town owns its water, gas, free library, natural-history museum, recreation grounds, markets, baths, and slaughterhouses. John Kempe, of Flanders, cloth weaver, with other compatriots, settled in Kendal under the protection of Edward III and inaugurated its industries. The town was incorporated in 1576. Pop., 1901, 14,183, 1911, 14,033.

KENDAL, Mrs. (1849-). The stage name of Mrs. Margaret ("Madge") Robertson Grimston, a well-known English actress. She was born at Great Grimsby, March 15, 1849, of a theatrical family, being the sister of the dramatist T. W. Robertson, and appeared as a child in several rôles, but made her début in 1865 as Ophelia at the Haymarket, London. She was married in 1869 to W. H. Grimston (Mr. Kendal), and the two thereafter acted together. In 1875, at the Opéra Comique, she made a great success as Miss Hardcastle. After a few years at the Court and Prince of Wales's theatres, in the course of which she played Dora in the English version of Sardou's *Diplomacy*, one of her greatest rôles, she went with her husband to St. James's Theatre, where among her noted parts were those of Kate Verity in *The Squire* (1881), Claire de Beaupré in *The Ironmaster* (1884), Rosalind in *As You Like It* (1885), Antoinette Rigaud (1886), and Lady Clancarty (1887). Mr. and Mrs. Kendal made their American début in *A Scrap of Paper* in 1889, and the success of their first tour in the United States was repeated in several successive seasons. In 1893 they produced *The Second Mrs. Tanqueray* in America. They continued to appear in popular plays without interruption till 1908, when they both retired, though Mrs. Kendal reappeared at the gala performance at

His Majesty's Theatre in 1911, playing Mistress Ford. Consult: Archer, "Mr. and Mrs. Kendal," in Matthews and Hutton, *Actors and Actresses of Great Britain and the United States* (New York, 1886); Scott, *The Drama of Yesterday and To-Day* (London, 1899); T. E. Pemberton, *The Kendals: A Biography* (New York, 1900).

KENDAL, WILLIAM HUNTER (real name WILLIAM HUNTER GRIMSTON) (1843-). An English actor manager. He was born in London and made his début in Glasgow when about 18 years old. Some four years later he appeared in London, at the Haymarket, and in 1869 he married Madge Robertson (see KENDAL, MRS.), with whose career his own was thereafter closely associated. He and John Hare as partners managed the St. James's Theatre from 1879 to 1888. In 1889-95 he toured successfully, with Mrs. Kendal, in the United States and Canada, and in 1908 both retired.

KENDALL, Amos (1789-1869). An American politician, born at Dunstable, Mass. He graduated at Dartmouth College in 1811; taught school and studied law at Groton, Mass.; and in 1814 removed to Kentucky, where he became a tutor in the family of Henry Clay at Ashland. In October of 1814 he was admitted to the Kentucky bar, in the following year became editor of a paper at Georgetown, Ky., and in September, 1816, editor of the Frankfort *Argus*, which was later one of the principal Jackson organs in the State. He was one of Jackson's chief advisers, and when the latter became President, in 1829, he took Kendall with him to Washington, appointing him Fourth Auditor of the Treasury. At Washington Kendall came to occupy a unique position. The foremost figure in Jackson's famous "Kitchen Cabinet" (q v.), "he proved more and more," says W. G. Sumner, in his *Life of Jackson*, "the masterful spirit of the administration." Jackson made him Postmaster-General in 1835, and he continued in that office during a greater part of Van Buren's term, administering the office with skill and integrity and introducing many improvements in the service, of which the money-order system (1838) was the most important. After his retirement from office he edited newspapers in Washington for several years and in 1845 became interested with Samuel F. B. Morse in the development of telegraph patents, a connection which continued until 1860 and made Kendall's fortune. Towards the end of his life he gave freely to various educational and charitable institutions, and founded at Washington, in 1857, the Columbia Institution for the Deaf and Dumb. Kendall violently opposed secession and supported Lincoln throughout the war, although still calling himself a "Jacksonian Democrat." He published a *Life of Jackson* (1843), and his *Autobiography* (ed. by William Stickney) was published at Boston in 1872.

KENDALL, GEORGE WILKINS (1809-67). An American journalist, born in Amherst (now Mount Vernon), Hillsboro Co., N. H. In 1837 he was one of the founders of the New Orleans *Picayune*. Seeking health and adventure, he joined the unfortunate Texan Santa Fe expedition in 1841, but was taken prisoner by the Mexicans and held for seven months. He was an eyewitness of much of the Mexican War, accompanying the American armies as correspondent for his paper. He published *Narrative of the Texan Santa Fé Expedition* (1844) and *War between United States and Mexico* (1851).

KENDALL, HENRY CLARENCE. See AUSTRALIAN LITERATURE.

KENDALL, WILLIAM MITCHELL. (1856-). An American architect, born at Jamaica Plain, Mass. He graduated from Harvard University in 1876, studied architecture at Massachusetts Institute of Technology for two years, and concluded his studies in France and Italy. He became a member of the firm of McKim, Mead, and White, New York City, and in this connection collaborated on the designs of various important buildings, among those in New York being the new Post Office, the Municipal Building, and, for Columbia University, the Avery Library, the School of Journalism Building, and the president's house. He also helped plan various private dwellings in New York and Chicago. In 1914 he was elected a member of the National Institute of Arts and Letters.

KENDALL, SERGEANT (WILLIAM SERGEANT) (1869-). An American figure painter, born at Spuyten Duyvil, N. Y. He studied at the Art Students' League in New York, with Eakins in Philadelphia, and at the Ecole des Beaux-Arts and with Merson in Paris. He became an academician in 1905 and won important medals at many exhibitions. In 1913 he was appointed director of the Yale Art School at New Haven. Among his best-known works are: "Beatrice," in the Pennsylvania Academy, Philadelphia, "An Interlude," in the National Gallery, Washington; "Narcissa," in the Corcoran Gallery, Washington; "The Seer" and "Psyche," in the Metropolitan Museum, New York. His portraits of children are especially admirable; and his color and technique are excellent, with much individuality.

KENDALLVILLE. A city in Noble Co., Ind., 27 miles north of Fort Wayne, on the Lake Shore and Michigan Southern and the Grand Rapids and Indiana railroads (Map: Indiana, G 2). It has a public library. There are extensive industrial establishments, including refrigerator works, flour and lumber mills, iron-works, and manufactories of stock tank heaters, pumps, clothes racks, mittens and gloves, caskets, novelty cases, cement tile and brick molds, etc. The city carries on a large grain trade and is situated in the centre of the Indiana onion belt. The water works plant are owned by the 1900, 3354, 1910, 4981.

KENDRICK, ASAHEL CLARK (1809-95). An American Greek and New Testament scholar. He was born at Poultney, Vt., graduated from Hamilton College in 1831, and became professor of classics at Madison (now Colgate) University. In 1850, with other professors, he left Madison and became first professor of Greek in a new college, the University of Rochester. There he served, with the exception of two years of travel in Italy and Greece, until his retirement in 1888. For several years he also occupied a chair in Rochester Theological Seminary. He was a member of the American committee for the revision of the New Testament (1872-80) and revised the English translation of Olshausen's *Commentaries on the New Testament* (6 vols., 1853-58) and "St. John," in H. A. W. Meyer's *Commentaries*. He published: *Echoes*, a volume of translated French and German poems (1855); *Life and Letters of Emily C. Judson* (1860); an edition of Xenophon's *Anabasis* (1873), long popular; *Our Poetical Favorites* (3 series, collected 1885); *Martin B.*

Anderson (1895). In 1872-73 Dr. Kendrick was president of the American Philological Association.

KENDRICK, JOHN (1745-1800). An American navigator, born at Martha's Vineyard. He commanded a privateer during the latter part of the Revolution and in 1787-88, as commander of the *Columbia* and *Washington*, fitted out by Boston merchants, explored Nootka Sound and parts of the northwest coast of America. In 1791 he made another voyage, and this time visited Oceania, discovered (and named) Massachusetts Sound, and opened the sandalwood trade between Hawaii and China. He was accidentally shot in Hawaii.

KENEALY, ke-né'li, EDWARD VAUGHAN HYDE (1819-80). An Irish barrister. He was born in Cork and in 1840 graduated B.A. at Trinity College, Dublin. He was called to the Irish bar in 1840 and to the English bar seven years later and in 1868 became queen's counsel and a bencher of Gray's Inn. In 1867 he was counsel for the defense of the Fenians Casey and Burke and in 1873 leading counsel for Orton, the claimant in the celebrated Tichborne case. This latter case he lost, partly because of the violence of his arguments and his unprofessional conduct; but he persisted, and for libelous attacks on the presiding justice and various barristers, made in the *Englishman*, which he had founded, he was expelled in 1874 from the Oxford circuit and disbenched by Gray's Inn. As a member of Parliament, elected for Stoke in 1875, he was unimportant. His publications include an edition of the proceedings of the Tichborne case and *Brallaghan, or the Deimosophists* (1845); *Goethe, a New Pantomime* (1850); *Poems* (1864); *Enoch, the Second Messenger of God* (1872). His scattered poems, collected in three volumes, appeared in 1875-79.

KENEH, kén'e, or GENEH, or KENA. The capital of an Egyptian province of the same name, on the right bank of the Nile, 34 miles north of Thebes (Map: Egypt, C 2). It is a station for Nile steamers and opposite a station on the Nile Valley Railroad and has a well-developed pottery industry and some sugar manufacturing. It is visited by numerous pilgrims from the interior of Africa, on their way to Mecca. Pop., 1897, 27,478, 1907, 29,053.

KENELM CHILLINGLY, kén'elm chil'ling-li. A novel by Lord Lytton (1873).

KENESAW MOUNTAIN, BATTLE OF. An engagement fought near Marietta, Ga., June 27, 1864, during the Civil War, between a Federal force of about 16,000 under General Sherman and a Confederate force of about 18,000 under Gen. Joseph E. Johnston. The Confederates were strongly intrenched on Kenesaw Mountain and repelled the Federal assault after two and a half hours of fighting the Federals losing nearly 3000, 10,000 of the brigade commanders Gen. C. G. Harker and Col. D. McCook. The Confederates lost about 800. It was the only serious reverse sustained by General Sherman in his Atlanta campaign. Soon afterward Sherman manoeuvred Johnston out of his position, and on July 2 the latter abandoned Kenesaw Mountain, falling back behind the Chattahoochee River.

KENEZITES. See KENIZZITES.

KENIA, ká'né-á, MOUNT. An isolated, extinct volcano in British East Africa, situated 12' south of the equator and 180 miles east of Victoria Nyanza (Map: Congo, G 2). Its

altitude is 17,191 feet; it is covered with perpetual snow above 15,000 feet and has a number of glaciers. Mount Kenia was first brought to the attention of the civilized world by Krapf in 1849. In 1897 it was ascended by Count Teleki to an altitude of 15,280 feet and partially ascended in 1893 by Dr. Gregory. The summit was reached by Kolb in 1896 and by Mackinder in 1899.

KEN'ILWORTH. A market town in Warwickshire, England, 5 miles north of Warwick (Map: England, E 4). It has the remains of an abbey erected in 1122. Near by is Kenilworth Castle, united to the crown domains, in the reign of Henry IV and conferred by Elizabeth upon Robert Dudley, Earl of Leicester, who here in 1575 entertained her for 19 days. Extensive remains of the castle exist. Kenilworth Castle is the scene of Walter Scott's famous romance (*Kenilworth*, 1821), through which runs the story of Amy Robsart, Leicester's unacknowledged wife, and of a novel by Ludwig Tieck. Pop., 1901, 4544; 1911, 5776. Consult Beck, *Kenilworth Castle* (Leamington, 1840, new ed., 1878).

KEN'ITES (Heb. *Kayin*, *ha-Ken*; Ar. *Banu'l Kayin*). A people occupying in ancient times the eastern part of the Negeb (q.v.) in south Palestine, and in the period immediately before Mohammed apparently a territory farther south extending into the Sinaitic Peninsula. According to 1 Sam. xv. 6, Saul said to the Kenites, "Go, depart, get you down from the midst of the Amalekites, lest I destroy you with them." The Kenites then went out of the midst of the Amalekites. It may be inferred that there were Kenite enclaves among the Amalekites, but not necessarily that the Kenites were nothing but an Amalekites clan. To this life with Amalek Judges (i 16) seems to allude in the statement that "the Kenites went with Judah from the city of palm trees [by which originally Tamar-Ain Weibeh may have been meant] into the wilderness of Arad which lies in the Negeb, and that they went and dwelt with Amalek" (so the Greek version). Precisely when this occurred is not known. About two centuries before Saul, Heber the Kenite left Kain, and more particularly the clan of the Bene Hobab, and pitched his tents near Kadesh (Naphtali).

That Hobab the Kenite was the father-in-law of Moses (Judg. iv. 11) may be a local tradition in this clan, less strongly supported than that which makes Jethro, the priest of Midian, Zipporah's father. Tiele and a number of other scholars have maintained that Yahwe was a Kenite deity adopted by Moses from his father-in-law, and H. P. Smith has recently (*The Religion of Israel*, pp. 50 f., New York, 1914) interpreted Ex. xviii. 5-12 as an account of the reception of the chief men in Israel into covenant with Jethro's God. It is difficult, however, to escape the impression that in this passage Jethro is represented as confessing for the first time his faith in the supremacy of Moses' God and showing its sincerity by the sacrifices he offers; nor can it be an accident that Elohim, and not Yahwe, is exclusively used in the conversation between him and Moses that follows. The theory of a Kenite origin of the worship of Yahwe in Israel and Judah can scarcely be said to rest on a solid foundation.

How far any fact in the earlier history of this people may be preserved in the story of Cain and Abel in Genesis iv is not easy to de-

termine. That Cain (Heb., *Kayin*) is the eponym of the tribe need not be questioned, nor that Abel was a tribe exterminated by the Kenites, nor that the nomadic life in the wild and sterile region of Nod (q.v.) appeared to the author to be the punishment for this crime of a people once cultivating the soil whence it was driven forth into the wilderness; but such a lapse into nomadic conditions is at least doubtful. It may indeed have been suggested by the fact that the tribe seems to have been only in part nomadic, there being Kenite cities in the Negeb, to account for which the story was told of Cain, the city builder. (See CAIN.) David told Achish that he made raids against the Negeb of the Kenites (1 Sam. xxvii 10) and later sent of the spoil of the Amalekites to the cities of the Kenites (1 Sam. xxx 29). In the prophecies of Balaam, which seem to reflect the historic situation of David's time, the Kenites are referred to as living in strong places and in a rocky region, but in danger of being devastated and carried away by Ashur (Num. xxiv 21, 22). It is less likely that the poet thought of the Assyrians than the Ashurim, neighbors of the Kenites in the south and southwest. Nöldeke is probably right in identifying the Kenites with the Arabic tribe Bal Kayin (*Banu'l Kayin*), flourishing in El Tih and El Tor in the sixth century A.D. Consult: Nöldeke, *Ueber die Amalekiter und einige andere Nachbarvölker der Israeliten* (Göttingen, 1864); Tiele, *Vergelykende geschiedenis der egyptische en mesopotamische godsdiensten* (Amsterdam, 1869-72); Stade, "Das Kainszeichen," in *Zeitschrift für alttestamentliche Wissenschaft* (Giessen, 1894); Ed. Meyer, *Die Israeliten und ihre Nachbarstämme* (Halle, 1906); N. Schmidt, *The Messages of the Poets* (New York, 1911).

KEN'IZZITES, or KEN'EZITES. One of the groups of pre-Israelitish inhabitants of Palestine named in Gen. xv 19-21. In Gen. xxxvi. 11, Kenaz (the eponymous ancestor of the Kenizzites) is enumerated among the Edomite clans, while according to Num. xxxii. 12, Josh. xiv. 6-14, Caleb (q.v.) appears as a Kenizzite. The relationship between the Caleb and Kenizzite clans is further illustrated by the designation of Othniel (Caleb's son-in-law) as a "son of Kenaz" (Josh. xv. 17, Judg. i 13, iii 9-11, 1 Chron. iv. 13), though the tradition on this point is somewhat hazy, since, according to 1 Chron. iv. 15, Kenaz is a grandson of Caleb. Confusing as these various notices are, we may at least conclude that Kenizzite was the name of an old "Canaanitish" clan settled in southern Palestine which entered into alliances with Edomite clans and also with the clan of Judah and became gradually absorbed in this way. The latter tribe, as has been pointed out (see JUDAH), is marked by the admixture of various non-Hebrew elements and appears to have been far more composite than any of the other Hebrew tribes, though probably none were entirely free from "Canaanitish" or other elements.

KEN'LY, JOHN REESE (1822-91). An American soldier, born in Baltimore, Md. He studied law and was admitted to the bar in 1845, but went to the Mexican War as lieutenant with a company of volunteers which he had raised, and was afterward promoted to the rank of major. He entered the Civil War as colonel of the First Maryland Regiment, which, together with some Pennsylvania companies, was captured by Stonewall Jackson, after hard fighting, at Front Royal

on the Shenandoah (May 23, 1862). Kenly himself was severely wounded when made prisoner, but his stand had saved General Banks's division at Winchester, and he was raised to the command of a brigade (1862). This he led at Hagerstown, Harper's Ferry, and elsewhere, and at the close of the war he was brevetted major general of volunteers. He published his Mexican experiences under the title *Memoirs of a Maryland Volunteer* (1873).

KENMARE, kën-mâr', NUN OF See CUSACK, M. F.

KENN, THOMAS. See KEN, THOMAS

KEN'NAN, GEORGE (1845-). An American author, journalist, and traveler, born at Norwalk, Ohio. He was educated in the public schools of his native town and of Columbus, Ohio, studied telegraphy; and in December of 1864 began his travels by a journey to Kamchatka, where he served the Russo-American Telegraph Company as telegraphic engineer, assisting in exploring parties in northeastern Siberia (1865-66) and superintending telegraph construction in middle Siberia (1866-68). On the abandonment of this enterprise he returned to the United States, but in 1870 explored the eastern Caucasus, Daghestan, Chechnia, and the course of the Volga to the Caspian, again in 1885-86 he made a journey of 15,000 miles through northern Russia and Siberia, investigating the convict, prison, and exile system and exploring the Russian Altai. In 1898 he went to Cuba and was special correspondent during the Spanish-American War for the *Outlook*, and for the same periodical went to Japan when the Russo-Japanese War opened. His accounts of his Russian travels attracted wide attention. They are collected as *Tent Life in Siberia* (1870, 1910) and *Siberia and the Exile System* (2 vols., 1892). A result of his Cuban sojourn was *Campaigning, in Cuba* (1899). He was expelled from Russia while carrying on further social and political studies. In 1902 he went to the island of Martinique, after the eruption of Mont Pelée, and climbed the still active volcano. His experiences are described in *The Tragedy of Pelée* (1902). The latter year saw also the publication of his *Folk Tales of Napoleon*. In 1905 he wrote of the situation in China, particularly as affecting American commerce and interests, and did much to clarify American ideas on that subject. He also published *A Russian Comedy of Errors* (1915). He became a member of the National Institute of Arts and Letters.

KEN'NEBEC' RIVER. The second largest river in Maine. It rises in Moosehead Lake in the west-central part of the State and flows south into the Atlantic Ocean, about 25 miles northeast of Portland, receiving its principal tributary, the Androscoggin, 18 miles from its mouth (Map: Maine, C 3). The drainage basin extends to the Canada line, about 150 miles, varies in width from 50 to 80 miles in the main division, and includes a total area of 5970 square miles, about one-fifth of the total area of the State. The length of the main stream is about 140 miles, and its descent is 1026 feet. It has falls at Augusta (where a dam has been built), at Waterville, and at three other points above, supplying abundant water power. It flows through a fertile and beautiful region, where considerable lumbering and cattle raising are carried on. It is navigable for large ships to Bath, 12 miles from the sea, and for steamboats

to Hallowell, 40 miles, except in winter, when it is closed by ice above Bath.

KENNEBUNK, kën'ë-bûnk'. A town in York Co., Me., 25 miles by rail southwest of Portland, on the Mousam and Kennebunk rivers, and on the Boston and Maine Railroad (Map: Maine, B 5). It has valuable water power and manufactures shoe counters, twine, lumber, leatheroid, trunks, traveling bags, etc. There is a free circulating library. Settled about 1650, Kennebunk was part of Wells until 1820, when it was incorporated as a separate township. The electric-light plant is owned by the municipality. Pop., 1910, 3099. Consult E. E. Bourne, *History of Wells and Kennebunk to 1820* (Portland, 1875), and Daniel Remick, *History of Kennebunk, from its Earliest Settlement to 1890, Including Biographical Sketches* (Kennebunk, 1911).

KENNEBUNKPORT, kën'ë-bûnk-pôrt'. A town in York Co., Me., 27 miles by rail southwest of Portland, on the Atlantic Ocean, at the mouth of the Kennebunk River, and on the Boston and Maine Railroad (Map: Maine, B 5). It has an excellent harbor and is one of the most popular summer resorts in the State, having a fine beach and numerous hotels. There are Talbot's Library, circulating and public libraries, and some manufactures, particularly of boats. Pop., 1900, 2123, 1910, 2130. Settled in 1629, Kennebunkport was incorporated in 1653 as Cape Porpoise, was almost completely destroyed by the Indians in 1703, was reincorporated as Arundel in 1717, and received its present name in 1821. Consult Charles Bradbury, *History of Kennebunkport* (Kennebunk, 1837).

KEN'NEDY, SIR ALEXANDER (BLACKIE WILLIAM) (1847-). An English mechanical and electrical engineer. He was born in Stepney, the son of a clergyman and a nephew of Prof. J. S. Blackie, studied at the City of London School and the Royal College of Mines; and worked for a time at marine engineering. In 1874-89 he was professor of engineering at University College, London, where he established the first engineering laboratory. Kennedy invented an autographic recorder for testing the strength of materials and in the *Proceedings* of the Institution of Civil Engineers for 1886 summarized the work of engineering laboratories and of testing machines. He designed large lighting and power plants in Edinburgh, Manchester, Calcutta, and in Japan; was chief engineer to the Westminster Electric Supply Corporation and consulting electrical engineer to the London and Northwestern Railway, served on various committees (naval boiler, 1900; naval machinery design, 1904; wireless telegraphy, 1913); became civil member of the Board of Ordnance in 1909; and was knighted in 1905. An enthusiastic Alpinist, he published *A. W. Moore's Alps in 1864* (1902). He translated Reuleux's *Kinematik* (1879) and wrote *The Mechanics of Machinery* (1886).

KENNEDY, ARCHIBALD R. S. (1859-). A Scottish Semitic scholar, born at Whitehills, Banff. He studied at Aberdeen, Glasgow, Göttingen, and Berlin; was a fellow of Glasgow in 1885-87 and professor of Hebrew at Aberdeen in 1887-94; and in 1894 became professor of Semitic languages at Edinburgh. In the "Porta Series" he prepared grammars of Hebrew (1885), Syriac (1889), Assyrian (1890), and Arabic (1895). Besides contributions to dictionaries of

the Bible, he published editions of Exodus (1901) and Joshua and Judges (1902), and commentaries on Samuel (1905) and Leviticus and Numbers (1910).

KENNEDY, BENJAMIN HALL (1804-89). An English classical scholar and educator, born near Birmingham. He was graduated at Cambridge in 1827 and the following year was elected a fellow and classical lecturer of St. John's College, Cambridge. He was then for six years assistant master at Harrow and from 1830 to 1866 was head master of Shrewsbury School. His headmastership at Shrewsbury was most successful: many of his pupils, among them H. A. J. Munro and J. E. B. Mayor, won marked distinction in classics. In 1866 he accepted the regius professorship of Greek at Cambridge, became canon of Ely in 1867 and a member of the university council in 1870. From 1870 to 1880 he was a member of the committee on the revision of the New Testament. Dr. Kennedy published a number of classical textbooks, two of which, *Public School Latin Primer* and *Public School Latin Grammar*, were long popular textbooks. He edited also parts of Sophocles, Aeschylus, and Aristophanes, and the whole of Vergil (31st ed., 1881). He translated *The Birds* of Aristophanes, and the Psalter, into English verse, besides publishing a collection of his own Greek, Latin, and English poetry. In this work, entitled *Between Whiles* (2d ed., 1882), he incorporated autobiographical matter. Consult Sandys, *A History of Classical Scholarship*, vol. iii (Cambridge, 1908).

KENNEDY, CHARLES RANN (1871-). A dramatist of English birth but American residence, born at Derby, and largely self-educated. Beginning as office boy and clerk, he became successively a writer and lecturer, a press agent and theatrical business manager, and finally a playwright. In 1908 he was unusually successful with his play *The Servant in the House*, a drama framed to carry a social and religious message. This was followed by *The Winterfeast* (1908), *The Terrible Meek* (1911), *The Necessary Evil* (1913), *The Idol-Breaker* (1914). All these pieces are serious and of a strong "reforming" tendency. In 1898 Kennedy married the actress Edith Wynne Mathison.

KENNEDY, GRACE (1782-1825). A Scottish writer. She was born at Pinmore, Ayrshire, but at an early age removed to Edinburgh. She wrote novels of a religious tendency which had no small vogue in their day. She is best known as the author of *Father Clement* (1823), an anti-Roman-Catholic novel, which ran through some dozen editions and was translated into several languages. Other books of hers are: *Anna Ross* (1823), *Dunallan* (2d ed., 1825), *Jeany Allan* (12th ed., 1853), and *Decision* (1821). A collected edition of her works in six volumes appeared at Edinburgh in 1827, and a German translation of them, *Sammtliche Werke*, in Bielefeld in 1844.

KENNEDY, SIR JAMES SHAW (originally SHAW, JAMES) (1788-1865). A British general, born in the Parish of Straiton, Ayrshire, Scotland, and educated in Maybole and the Ayr Academy. He was made an ensign at the age of 17 and was advanced steadily to the rank of general in 1863. He went abroad with his regiment, the Forty-third Light Infantry, in 1807, distinguished himself in the Peninsular campaign, fought under Wellington in Belgium, and left behind him *Notes on Waterloo* that were

published (1865), also a *Plan for the Defence of Canada*, and an autobiographical sketch. His essay, *Notes on the Defence of Great Britain and Ireland* (1859), was frequently reprinted.

KENNEDY, JOHN (1813-1900). A Scottish Congregational minister and author, born at Aberfeldy, Perthshire, and educated at Aberdeen, Edinburgh, and Glasgow universities. He was pastor of a Congregational church in Aberdeen from 1836 to 1846, when he was called to the Stepney Congregational Meeting House in London, a charge which he held till his retirement in 1882. From 1872 to 1876 he was professor of apologetics at New College, London, and from 1884 to 1895 chairman of the New College council. He edited *The Christian Witness* (1866-73) and *The Evangelical Magazine* (1887-90). The most widely known of his books are, probably, *The Divine Life* (1858) and *A Handbook of Christian Evidences* (1880). Among his other publications are *The Gospels Their Age and Authorship* (1880), *The Pentateuch Its Age and Authorship* (1884), *Old Testament Criticism and the Rights of Non-Experts* (1897).

KENNEDY, JOHN (1838-) A Canadian civil engineer. He was born at Spencerville, Ontario, and was educated at McGill University. In 1863 he was appointed assistant city engineer of Montreal. In 1871 he became division engineer, and later chief engineer, of the Great Western System of Canada. In 1875-1907 he was chief engineer of the Montreal harbor commission. He deepened the ship canal between Montreal and Quebec from 20 to 27½ feet and designed and carried out all the improvements in Montreal harbor during 32 years. He was a member of several royal commissions for engineering purposes connected with the Lachine Canal, the causes of floods at Montreal, and the completion of the Trent Valley Canal system.

KENNEDY, JOHN PENDLETON (1795-1870). An American novelist. He graduated at Baltimore College (University of Maryland) in 1812 and in 1814 fought in the battles of Bladensburg and North Point. He was admitted to the bar in 1816, was for several years a member of the Maryland House of Delegates, from 1839 to 1845 was a member of Congress, where he advocated Whig principles, and during Fillmore's administration was Secretary of the Navy (1852). He then retired from politics, but he upheld the Union during the war. Kennedy is now chiefly remembered as a writer of romances, among which are *Swallow Barn* (1832), *Horse-Shoe Robinson* (1835), and *Rob of the Bowl* (1838). Among his other books are: *Annals of Quodlibet* (1840), a political satire; *Mr Ambrose's Letters on the Rebellion* (1865); *Memoirs of the Life of William Wirt* (2 vols., 1849), an excellent biography of the leisurely kind. It is worth noting that Kennedy constantly befriended Edgar Allan Poe, and that while abroad he became a friend of Thackeray and wrote or outlined the fourth chapter of the second volume of *The Virginians*, a fact which accounts for the great accuracy of its scenic descriptions. Of his works *Horse-Shoe Robinson* is the best and ranks high in antebellum fiction. For his life, consult the biography, by Tuckerman, which forms the tenth volume of his collected works (New York, 1870-72).

KENNEDY, JOHN PITT (1796-1879). A British military engineer, born at Donagh, Donegal County, Ireland. He was educated at Foyle College, Londonderry, and the Royal Military

Academy, Woolwich, becoming lieutenant in an engineer corps in 1815. Four years afterward he was sent to Malta, thence to Corfu, and he superintended the formation of a harbor and canal at Santa Maura (1820). He served next under Sir Charles Napier at Cephalonia, building lighthouses, roads, and quays; was subinspector of militia in the Ionian Islands (1828-31); and then returned to Ireland, where he set himself to the discovery of ways and means for improving the lamentable condition of the agricultural classes. His methods are indicated by the title of his work, *Instruct; Employ; Don't Hang Them: or Ireland Tranquilized without Soldiers and Enriched without English Capital* (1835). He wrote several others of similar nature, and as inspector general for Irish education (1837), as secretary to the Devon commission (1843) and to the famine relief committee (1845), his labors were unceasing in behalf of his native land; but he went back to the army in 1849 as military secretary to Sir Charles Napier and accompanied him to India. There he built the military road named after him and extending from Kalka via Simla to Kunawur and Tibet. He published *British Home and Colonial Empire* (1865-69), as well as a number of technical works relative to his Indian career.

KENNEDY, JOHN STEWART (1830-1909). An American capitalist and philanthropist. He was born near Glasgow in Scotland, received a scant education in school, studied in his spare moments as a clerk, and at 20 was sent to America by a London iron firm, in whose branch house in Glasgow he worked for four years. Then he came again to New York and entered business with Morris K. Jesup. From this partnership he retired in 1867 and from active business in 1883, although he was still called upon after that date to aid in the reorganization of various financial concerns, notably in 1888, when he acted with J. S. Harris as receiver of the New Jersey Central Railroad. He was prominently connected during his life with New York charities, and his will gave away \$30,000,000—bequests of \$2,500,000 each to Columbia University, the New York Public Library, Metropolitan Museum of Art, Presbyterian Board of Home Missions, Presbyterian Board of Foreign Missions, Presbyterian Church Election Fund, and Presbyterian Hospital, four gifts of \$1,500,000 each, three of \$750,000 each, nine (to colleges) of \$100,000 each, and 10 of \$50,000 each, besides numerous .

KENNEDY, JOSEPH CAMP GRIFFITH (1813-87). An American statistician. He was born at Meadville, Pa., was educated at Allegheny College, studied law, and for a time edited country newspapers. In 1849 he was put in charge of the . . . of the United States Census Bureau . . . he was made superintendent of the census. He had previously consulted with European statisticians in regard to census matters and in 1850 had suggested to them an international arrangement by which the facts could be more expeditiously gathered, a discussion which led to the holding of the congress of statisticians at Brussels in 1853. During the administration of President Johnson he was appointed examiner of national banks.

KENNEDY, ROBERT (1865-). A Scottish surgeon and anatomist. He was born in Glasgow and was educated there, at Edinburgh, and at Berlin. After being surgeon to infirmaries and hospitals in Glasgow, he was examiner

in surgery at St. Andrews from 1901 to 1904. At the University of Glasgow he was lecturer in applied anatomy from 1906 to 1911, when he became St. Mungo professor of surgery. A specialist in nerve surgery, Kennedy contributed papers on this subject to medical journals, and in Chipault's *Etat actuel de la chirurgie nerveuse* (1903) he wrote "Suture et anastomoses des nerfs."

KENNEDY, THOMAS FRANCIS (1788-1879). A Scottish political reformer, born at Greenan, near Ayr. He was educated at Harrow and at Edinburgh University, was admitted to the Scottish bar in 1811, and became a member of Parliament in 1818. Thereafter he devoted his attention to Liberal reforms. He obtained in 1825 the right of prisoners to a peremptory challenge under a ballot method of selecting juries and took a leading part in bringing about numerous other . . . them, the abolition of religious . . . extension of the franchise, the lowering of the corn duties, and the gradual extinction of the Scottish Court of the Exchequer. Under the Whig government he became clerk of ordinance in 1832, later Junior Lord of the Treasury, in 1837 paymaster of civil services in Ireland, and in 1850 Commissioner of Woods and Forests, retiring in 1854.

KENNEDY, WILLIAM (1799-1871). A British poet and prose writer, born near Dublin of Scottish parentage. After . . . a time at Belfast College, he went . . . was on the staff of the *Parish Magazine*, next a literary worker in London, from 1830, and eight years afterward went as secretary with Lord Durham to Canada. Thence he drifted south to Texas and in 1841 was British Consul at Galveston, but retired invalided with a pension (1849), first to London, then to Paris, where he died. He published two volumes of verse, chiefly lyrical, called *Futful Fancies* (1827), *The Arrow and the Rose, and Other Poems* (1830); a drama, *The Siege of Antwerp* (1838); and *The Rise, Progress and Prospects of the Republic of Texas* (2 vols., 1841).

KENNEDY, SIR WILLIAM RANN (1846-1915). An English jurist. He was educated at Eton and at King's College, Cambridge, where he won high honors in scholarship, and was called to the bar by Lincoln's Inn in 1871. Active in Liberal politics, he stood for Birkenhead in 1885 and 1886 and for St. Helen's in 1892. He became queen's counsel in 1885 and served as judge of the Queen's Bench Division of the High Court of Justice from 1892 to 1907, when he became a Lord of Appeal. In 1891 (2d ed., 1907) he published *Law of Civil Salvage*, a subject on which he was an authority. He served as president of the International Law Association, was a fellow and afterward honorary fellow of Pembroke College, Cambridge, and received the degree of LL.D. from Victoria University.

KENNEDY, WILLIAM SLOANE (1850-). An American author, born at Brecksville, Ohio. He graduated from Yale University in 1875, studied two years at Harvard, and became a staff writer for the *Boston Transcript*. Besides translating from the French and Italian and contributing to magazines, especially on Italian language and literature, he edited Walt Whitman's *Diary in Canada* (1904), and wrote: *Henry Wadsworth Longfellow* (1882); *John Greenleaf Whittier* (1882); *Oliver Wendell Holmes* (1883); *Wonders and Curiosities of the*

Railway (1884; new ed., rev., 1906); *John G. Whittier, the Poet of Freedom* (1892); *Reminiscences of Walt Whitman* (1896); *In Portia's Gardens* (1897).

KENNELLY, ARTHUR EDWIN (1861–). An American electrical engineer, born in Bombay, India, and educated at University College School, London. After holding several positions up to 1886, he then became senior ship's electrician for the Eastern Telegraph Company, and a year later came to the United States to be principal electrical assistant to Thomas A. Edison. From 1894 to 1901 he was established as a consulting electrical engineer at Philadelphia, in 1902 he became professor of electrical engineering at Harvard University, and in 1903 he had charge of laying cables for the Mexican government. He served as president of the American Institute of Electrical Engineers (1898–1900) and of the Illuminating Engineering Society (1911). Regarded as an authority, especially on the use of magnetics in engineering and on alternating electric currents, he is author of *Theoretical Elements of Electro-Dynamic Machinery* (1893), *Elementary Electro-Technical Series* (1897); *Electro-Dynamic Machinery* (1898); *Recent Types of Dynamo-Electric Machinery* (1899), *Electricity Made Easy* (1899); *The Interpretation of Mathematical Formulae* (1899); *Wireless Telegraphy* (1907); *The Application of Hyperbolic Functions to Electrical Engineering Problems* (1912); *Tables of Complex Hyperbolic and Circular Functions* and a supplementary *Chart Atlas* (1914).

KENNERLEY, MITCHELL (1878–). An American publisher, born at Burslem, England. He was manager of the New York branch of John Lane, the London publisher, from 1896 to 1900, business manager of the *Smart Set* in 1900–01, founded in 1901 and was editor and proprietor until 1905 of the *Reader* magazine, and then engaged in the publishing business. In 1910 he undertook the publication of the *Forum* and of the *Papyrus*.

KENNET. A river of England and tributary of the Thames. It rises on the Marlborough Downs in Wiltshire and flows east through Berkshire, emptying into the Thames at Reading, after a course of 45 miles (Map: England, E 5). It has been made navigable for ships drawing 3½ feet to Newbury, from which town the Kennet and Avon Canal crosses the country to Bath, thus making the river a part of the waterway connecting the North Sea with St. George's Channel.

KENNETH I (called MACALPINE) (?–860). A Scottish king who came to the throne in Galloway, in 832 or 834, on the death of his father. His power spread rapidly; he drove out the Danes (841), united the Scottish and Pictish kingdoms, and invaded Lothian six times. He transferred relics of St. Columba to Dunkeld, which became the ecclesiastical centre of his kingdom. Consult Andrew Lang, *History of Scotland*, vol. i (New York, 1900).

KENNETT, ROBERT HATCH (1864–). An English Hebrew scholar. He was born in St. Lawrence, Ramsgate, and was educated at Queens' College, Cambridge, where he was chaplain in 1887–93 and in 1903 and lecturer in Hebrew and Syriac in 1887–1903. He was lecturer in Hebrew and Syriac at Caius College in 1891–93 and university lecturer in Aramaic in 1893–1903, and then became regius professor of Hebrew and canon of Ely. In 1909 he was

Schweich lecturer. Kennett contributed to the *Cambridge Biblical Essays* (1909), to theological journals and biblical dictionaries, and wrote *A Short Account of the Hebrew Tenses* (1901), *In our Tongues* (1907), and *The Servant of the Lord* (1911).

KENNETT, WHITE (1660–1728). A Church of England prelate. He was born at Dover, Aug. 10, 1660, was educated at Westminster School and Oxford, and became rector of Ambrosden in 1685. In 1691 he returned to Oxford as tutor and vice principal of Edmund Hall, where he had for a pupil the famous antiquary Hearn. He became Archdeacon of Huntingdon in 1701, dean of Peterborough in 1707–08, and Bishop of Peterborough in 1718. He was an eloquent preacher, a learned antiquary, historian, and theologian. He was a strong opponent of the High Church party. He published numerous works, the most important of which are: *Parochial Antiquities* (1695; new ed., 2 vols., 1818); the third volume of a *Compendious History of England* (published anonymously in 1706), extending from the accession of Charles I to the end of Queen Anne's reign; *A Register and Chronicle, Ecclesiastical and Civil, from the Restoration of King Charles II*, vol. 1 (1728). He left numerous historical manuscripts, now a part of the Lansdowne collection in the British Museum. He died at Westminster, Dec. 19, 1728. Consult his *Life*, by Newton (London, 1730).

KENNEY, ANNIE (?–). An English woman-suffrage leader, born at Lees, Lancashire. She became intimate with the Pankhursts and in 1905 was arrested with Miss Christabel Pankhurst and imprisoned for three days, charged with disorder at Sir Edward Grey's meeting in the Free Trade Hall, Manchester. She then became the first organizer of the Women's Social and Political Union. For attempting in 1906 to interview Mr Asquith, then Chancellor of the Exchequer, she was sentenced to six weeks' imprisonment, and again in October of that year, for her protest (outside the House of Commons) against the government, she was sent to prison for two months. In 1908, having gone with Mrs. Pankhurst on a deputation to the House of Commons, she was again imprisoned. When the leaders of the Women's Social and Political Union were arrested in 1912, she took charge of the work in London. She was arrested, released, and rearrested several times in 1913 under the "Cat and Mouse" Act; and in 1914, for forcing an entrance to Lambeth Palace to address the Archbishop of Canterbury, she was taken to Holloway Gaol.

KENNEY, CHARLES LAMB (1821–81). An English journalist and author, son of James Kenney. Born at Bellevue, near Paris, by 1837 he was a clerk in the General Post Office at London and a few years later was writing dramatic criticism for the *London Times*. In 1856 he was called to the bar. His publications include a book in support of the building of the Suez Canal—Kenney was at one time Ferdinand de Lesseps' secretary—entitled *The Gates of the East* (1857); *Memoir of M. W. Balfe* (1875); a translation (1878) of Balzac's *Correspondence*; the words to several musical sketches and light operas, popular songs, and some excellent *vers de société*. Like his father, he kept good literary company, and among his friends were Thackeray and Dickens. There is considerable information about him in John Genest's *English Stage*, vols.

vii and viii (London, 1832), and in P. W. Clayden's *Rogers' and his Contemporaries* (2 vols., ib., 1889).

KENNEY, JAMES (1780-1849). A popular dramatist of Irish birth and English breeding. After 1803, when his farce *Raising the Wind* appeared, he wrote many successful plays, ranging in kind from farce to tragedy. His father was a quondam manager of Boodle's Club, London, a part owner of that institution, and a familiar figure in the London sporting world. The son was placed in a London bank, but out of banking hours developed a strong taste for amateur acting and passed from that to play writing. Some of his plays have been many times revived, and one or two still hold the stage. *Sweethearts and Wives* (1823) was his great hit, and other successes include the musical afterpiece *Turn him Out* (1812); *Love, Law, and Physic* (1812); *Spring and Autumn* (1827); *The Illustrious Stranger* (1827); *Musaniello* (1829); *The Sicilian Vespers* (1840), a tragedy. Kenney frequented Samuel Rogers's feasts of reason and was a friend of Charles Lamb.

KENNGOTT, kēn'gōt, GUSTAV ADOLF (1818-97). A German mineralogist, born in Breslau. He was educated at the University of Breslau, in which he was appointed a lecturer (1844). Subsequent appointments were those of professor of natural history in the Pressburg Realschule (1850-52), assistant custodian of the Imperial mineral cabinet at Vienna (1852-56), professor of mineralogy in the Polytechnic School of Zurich (1856-57), and professor of mineralogy in the University of Zurich (1857-97). His services in the development of crystallography, petrology, and mineralogy are recognized as important. His publications include *Lehrbuch der reinen Kristallographie* (1846); *Lehrbuch der Mineralogie* (1851; 5th ed., 1880); *Elemente der Petrographie* (1868); *Handwörterbuch der Mineralogie, Geologie und Paläontologie* (2 vols., 1882-86), with Lasaulx and other scientists.

KENNICOTT. See KATALLA.

KENNICOTT, BENJAMIN (1718-83). An eminent biblical scholar. He was born at Totnes, Devonshire, April 4, 1718, and educated at Oxford, where he highly distinguished himself. He took his degree of M.A. in 1750, having been previously elected a fellow of Exeter College; in 1767 he was appointed Radcliffe librarian; and in 1770 canon of Christ Church, Oxford, where he died, Sept. 18, 1783. The whole interest and importance of Kennicott's life are comprised in his great undertaking for the improvement of the Hebrew text of the Old Testament. In 1753 he published a work entitled *The State of the Printed Hebrew Text of the Old Testament Considered* (2d ed., 1759). This contained observations on 70 Hebrew manuscripts, with an extract of mistakes and various readings, and showed the necessity for a much more extensive collation, in order to ascertain or approximate towards a correct Hebrew text. He undertook to execute the work in the course of 10 years and labored, until his health broke down, from 10 to 14 hours a day. In spite of considerable opposition from bishops Warburton, Horne, and other divines, Kennicott succeeded in enlisting the sympathies and obtaining the support of the clergy generally. Upward of 600 Hebrew manuscripts and 16 manuscripts of the Samaritan Pentateuch were collated, with the assistance of other English and continental scholars. The

first volume of his edition of the Hebrew Bible appeared in 1766, and the second in 1780, accompanied by a very useful and instructive dissertation. The text chosen was that of Van der Hooght, without the vowel points, and the various readings were printed at the bottom of the page. The *Variae Lectiones Veteris Testamenti* (Parma, 1784-87), published by De Rossi, is a very valuable addition to Kennicott's Hebrew Bible. Jahn published at Vienna (1806) a very correct abridgment, embracing the most important of Kennicott's readings.

KENNY, SIR THOS. KELLY. See KELLY-KENNY, SIR THOS.

KENO, or KINO, kē'nō (origin of the term unknown). A variation, for gamblers' purposes, of the juvenile game of lotto. In the common form of the game, balls numbered from 1 to 99 are placed in a hollow globe called a goose, which can be revolved so that the balls may be well shaken up. The number of each ball is called as it emerges from the goose. Cards bearing four rows of five numbers each are sold to the players, each of whom covers any ball's number which appears on his card. The player who thus first covers a row of five numbers calls out "Keno!" and receives the stakes of all of the other players, minus a certain percentage paid to the bank.

KENORA (formerly RAT PORTAGE). A town, port of entry, and the capital of the Rainy River District, Ontario, Canada, on the Lake of the Woods at its outlet and on the Canadian Pacific Railway, 133 miles east of Winnipeg (Map: Ontario, F 8). Among its public buildings are the Anglican and Roman Catholic cathedrals, a hospital, courthouse, and jail. Its manufactured products include flour, lumber, railway ties, and boats. It is situated in a lumbering district, and gold is found in the vicinity. It is a summer resort. Kenora owns its telephone and electric-light plants and its water works. Pop., 1901, 5202, 1911, 6158.

KENOSHA. A city and the county seat of Kenosha Co., Wis., on Lake Michigan 34 miles south of Milwaukee, on the Chicago and Northwestern Railroad and on the Pere Marquette and Hill boat lines (Map: Wisconsin, F 6). It has Kemper Hall School and library and the Simmons Memorial Library. The city manufactures extensively tanned leather, machine-shop products, carriage and automobile lamps, beds, plumbers' supplies, brass goods, automobiles, springs, hosiery, underwear, wagons, furniture, etc. There is a fine harbor. Kenosha was first incorporated in 1841 and in 1850, when its present name was adopted, it received a city charter. The water works are owned by the city. Pop., 1900, 11,606; 1910, 21,371; 1914 (U. S. est.), 26,062.

KENO'SIS (Gk. *kénōsis*, emptying). A term derived from the word *ἐκένωσε*, in Phil. ii. 7, used in recent theology to designate a supposed self-limitation of Himself by the Logos (q.v.) to the capacities of humanity for the purpose of incarnation. The suggestion of a kenosis was made by Liebner about the year 1840 and has been taken up most thoroughly by the theologians in particular Gieseler, Deussen, and Frank. In spite of many verbal differences, these theologians manifest a remarkable agreement in the substance of their teachings upon this subject. The problem they are attempting to solve by the theory of kenosis is the old problem of the union of two natures, human and

divine, in the one consciousness of the God-man. The personality of Christ is conceived by them all to reside in the divine element, the Logos. But the one and undivided person of Jesus is ignorant of certain things, as of the day and hour of the destruction of Jerusalem, is limited in a variety of ways, feels His dependence upon God and prays to the Father, and is not only temptible, but truly tempted, yet without sin. It follows at once that the Logos, i.e., God, is thus ignorant, dependent, tempted, etc. How is this possible? The answer given by these theologians is that the Logos, by a voluntary divine act, limited Himself to the capacity of humanity when He assumed it, so that His experiences are truly human experiences. They do not transcend the possibilities of humanity, however they may differ from ordinary human experiences. By the self-limitation there was no loss of the essential attributes of deity, such as knowledge, but there was a surrender of the exercise of these attributes in particular ways, as in the form of omniscience, which is the knowledge of all actual things in their concrete totality. Thus, the Logos did not actually know all the future while in the earthly state. The evidences presented that there was an actual kenosis are the facts of Christ's life, as indicated above, and the express statements of the Scriptures of a change in entering upon the human condition, and especially the positive statement of an "emptying" in the Philippian passage. The great objection to the kenosis lies in the unchangeability of God. Can deity change itself? Would it not thereby abandon the essential characteristic of divinity, that it exists by necessity in itself? Can we conceive of deity passing into unconsciousness? The reply of the kenotists to this objection is that we must not determine what facts are by our a priori conception of unchangeability, but must determine our idea of unchangeability by the facts. The whole question then turns on the two points, Was the personality of the God-man resident in the Logos? and, Was this one person, the Logos, ignorant? Consult. Thomasius, *Christi Person und Werk* (Erlangen, 1802-61); Gess, *Die Lehre von der Person Christi* (Basel, 1856); Frank, *System der christlichen Gewissheit* (Erlangen, 1870-73); Simon, *Reconciliation by Incarnation* (Edinburgh, 1898); Mackintosh, *The Doctrine of the Person of Jesus Christ* (New York, 1912). See CHRISTOLOGY. INCARNATION

KEN'RICK, FRANCIS PATRICK (1797-1863) An American Roman Catholic prelate. He was born in Dublin and studied in Rome from 1815 to 1821. Ordained priest at the end of this course, he was sent out to take charge of a new seminary at Bardstown, Ky., which he conducted for nine years. In 1830 he was made coadjutor to Dr. Conwell, whom he succeeded as Bishop of Philadelphia in 1842. Here he founded the Seminary of St. Charles Borromeo. In 1851 he was transferred to the see of Baltimore, in time to preside over the first plenary council of the American bishops in the following year. His most celebrated works are his Latin treatises, *Theologia Dogmatica* (4 vols., 1839-40) and *Theologia Moralis* (3 vols., 1841-43); but he attracted much attention by a controversy with the Episcopalian Bishop Hopkins of Vermont, of which his side was published in 1837, under the title of *The Primacy of the Holy See and the Authority of General Councils*. At the time

of his death he was preparing a revised English translation of the Bible, with copious notes, and had brought out a part of it. Consult O'Shea, *The Two Kenricks* (Philadelphia, 1904).

KENRICK, PETER RICHARD (1806-96). An American Roman Catholic archbishop, brother of Francis Patrick Kenrick (q.v.) He was born at Dublin, was educated at Maynooth College, came to America in 1833, became assistant pastor and in 1835 pastor of the Philadelphia Cathedral Parish, was professor of dogmatics in the seminary of the diocese and then vicar-general, and in 1843, after two years as coadjutor, became Bishop of St. Louis. After the division of his large diocese in 1847 he was appointed Archbishop. He was prominent in charitable work, especially during the Civil War, and built many churches and founded many schools in his see. He strongly objected to the dogma of papal infallibility, framed an elaborate protest, which he was not allowed to deliver in council, in which he declared the definition false; but acquiesced in the final decree. Kenrick wrote *The Holy House of Loreto: An Examination of the Historical Evidence of its Miraculous Translation*, and *Anglican Ordinations*.

KENRICK, WILLIAM (1795-1872). An American nurseryman. When 28 years of age, he was taken into partnership by his father, a pioneer nurseryman, whose gardens were planted in 1790 upon the ground where John Eliot commenced preaching the gospel to the Indians. Perhaps Kenrick will be best remembered on account of his introduction of the mulberry, and the active part he took in the attempt to establish the silk industry in America. His book, *The American Silk-Growers' Guide*, appeared in 1835.

KEN'SAL GREEN. A London cemetery, occupying about 60 acres and containing about 70,000 graves; Sydney Smith, the actor Kemble, Sir Charles Eastlake, Leigh Hunt, Thackeray, and other celebrities are buried here.

KEN'SETT, JOHN FREDERICK (1818-72) An American landscape painter, born at Cheshire, Conn. He was apprenticed to his uncle, a bank-note engraver, but devoted his leisure to the study of painting. In 1840 he went to England, where he studied for five years, supporting himself by engraving. The sale of his first picture, a view of Windsor Castle, exhibited at the Royal Academy, encouraged him to persevere, and he spent the next two years painting landscapes in Italy. His "View on the Arno" and "Shrine," exhibited at the National Academy, New York, in 1848, established his reputation in America, and he was elected an Academician in 1849. Representative of his work as a member of the so-called Hudson River school is a painting (on exhibition at the Metropolitan Museum, New York) which shows the town of Cornwall, with Dunderberg and Storm King in the distance. In the same museum, but not on exhibition, are 38 of his paintings, some unfinished, the last summer's work of the artist, presented by his brother, Thomas Kensett, in 1874. His "Sunset on the Coast" and "October Afternoon" are in the Corcoran Gallery, Washington. His work is delicate and refined, but weak in drawing and composition.

KEN'SINGTON GARDENS. One of the public ornamental parks of London, extending on the west side of Hyde Park, from which it is partly separated by the Serpentine. It is trav-

ersed by walks and ornamented with rows and clumps of noble trees. Near the western border of the park stands Kensington Palace. The gardens at first consisted of the grounds attached to the palace and were only 26 acres in extent, but they have been frequently enlarged and now are 2½ miles in circuit. There are many notable buildings in the vicinity.

KENSINGTON MUSEUM. See **SOUTH KENSINGTON MUSEUM**.

KENSINGTON PALACE. A royal residence in the Parish of Kensington, London. In it William III and Mary, Queen Anne and her husband, Prince George of Denmark, and George II died. It was the birthplace of Queen Victoria, who there was informed of William IV's death and her own accession to the throne. It was later the residence of Princess Louise and the Marquis of Lorne and of the Prince and Princess of Teck.

KENT. A maritime county in the southeast of England, bounded north by the Thames estuary, east by the North Sea, south by the Strait of Dover and Sussex, and west by Surrey and London (Map: England, G 5). Area, 1525 square miles. Kent is a highly productive agricultural county, with numerous market gardens and orchards, it has always been the leading hop growing county of England. It contains the cities of Canterbury, Rochester, Dover, Folkestone, Gillingham, and Maidstone, the county town, the important dockyards and arsenals of Woolwich, Chatham, and Sheerness, and the famous watering places of Margate, Ramsgate, and Tunbridge Wells. Pop, 1901, 961,139, 1911, 1,045,661. Kent was at one time an Anglo-Saxon kingdom. It was settled by the Jutes and became prominent when its King, Ethelbert (q.v.), was converted to Christianity by St. Augustine in 597. When Ethelbert died, in 616, the kingdom became pagan again for a short time. It rapidly declined in power and remained important chiefly as the seat of the Archbishop of Canterbury. In the course of the eighth century it lost all independence, and it was ruled over by the state that happened to be supreme, whether it was Wessex (q.v.) or Mercia (q.v.). During the reign of William I Kent seems to have been a county palatine. Several codes of law of the old kingdom have come down to us. Consult Hasted, *The History and Topographical Survey of Kent* (Canterbury, 1801), and *Victoria History of the County of Kent* (London, 1908).

KENT. A town in Portage Co, Ohio, 10 miles northeast of Akron, on the Baltimore and Ohio, the Erie, the Northern Ohio Traction and Light, and the Wheeling and Lake Erie railroads (Map: Ohio, H 3). It is the seat of a State normal school and contains a Carnegie library. The industrial establishments include flour mills, railroad machine shops, and manufactories of concrete mixers, nuts and bolts, and locks. Ample water power is available. Pop, 1900, 4541; 1910, 4488.

KENT, CHARLES (WILLIAM CHARLES MARK) (1823-1902). An English poet, biographer, and journalist, born in London. After completing his education at Prior Park and Oscott, he became editor of the *Sun* (1845-70), studied law at the same time and was called to the bar in 1859, but devoted himself thereafter to literature. He edited the *Weekly Register*, a Roman Catholic paper (1874-81). A personal friend of Charles Dickens, he contributed to *Household*

Words and *All the Year Round* under Dickens's editorship and to other periodicals. Several volumes of poems, published previously in the forties, fifties, and sixties, provided the material for his collected *Poems* (1870). In later years he gave himself largely to editorial work—chiefly complete editions of the greater English writers, memoirs, and critiques, and notably Burns (1874), Lamb (1875 and 1893), Moore (1879), Father Prout (1881), and Lord Lytton (1875, 1883, and 1898). He also wrote *Leigh Hunt as an Essayist* (1888), *The Wit and Wisdom of Lord Lytton* (1883), and *The Humour and Pathos of Charles Dickens* (1884). Consult J. C. Francis, *Notes by the Way* (1909).

KENT, CHARLES FOSTER (1867-). An American Old Testament scholar, born at Palmyra, N. Y. Educated at Yale (A.B., 1889; Ph.D., 1891) and at the University of Berlin (1891-92), he was an instructor at the University of Chicago (1893-95), associate professor (1895-98) and professor (1898-1901) of biblical literature and history at Brown University, and professor of biblical literature at Yale after 1901. His publications include: *Outlines of Hebrew History* (1895); *A History of the Hebrew People* (2 vols., 1896-97; 2d ed., 1912); *A History of the Jewish People during the Babylonian, Persian, and Greek Periods* (1899); *The Messages of Israel's Lawgivers* (1902, 1911); *Israel's Historical and Biographical Narratives* (1905), *Origin and Permanent Value of the Old Testament* (1906, 1912), *Israel's Laws and Traditional Precedents* (1907); *The Heroes and Crises of Early Hebrew History* (1908, 1912); *The Kings and Prophets of Israel and Judah* (1909, 1912), *The Makers and Teachers of Judaism* (1911), *Biblical Geography and History* (1911), *Life and Teachings of Jesus According to the Earliest Records* (1913); *The Songs, Hymns, and Prayers of the Old Testament* (1914). Kent was a contributor to the **NEW INTERNATIONAL ENCYCLOPEDIA**.

KENT, EDWARD AUGUSTUS, DUKE OF (1767-1820). An English prince, the fourth son of George III and father of Queen Victoria. He entered the army and in 1794 served under Sir Charles Grey in the attack on the French West India Islands, in recognition of his valor, Fort Royal in Martinique was changed to Fort Edward. In 1799 he was made Duke of Kent and Strathearn and appointed commander in chief of the British forces in North America, and in 1805 he was made a field marshal. The name of the island of St John was changed in his honor to Prince Edward Island. In 1818 he married Victoria Mary Louisa, Dowager Princess of Leiningen.

KENT, FAIR MAID OF See **FAIR MAID OF KENT**.

KENT, JACOB FORD (1835-). An American soldier. He was born in Philadelphia and graduated at West Point in 1861. He served through the Civil War, especially distinguishing himself at Spottsylvania and in the campaign before Richmond, and in October, 1864, was brevetted colonel of volunteers. At the close of the war he became assistant instructor in tactics at West Point and from 1869 to the time of the Spanish War was on frontier duty or in garrison. He took part in the Cuban campaign, commanding the forces which captured El Caney, and in July, 1898, became major general of volunteers. In the regular army he was promoted through the various grades to that of brigadier

general in October, 1898. Later in the same month he was retired.

KENT, JAMES (1763-1847). An eminent American jurist, born in Fredericksburgh, Putnam Co., N. Y., July 31, 1763, the son of Morse and Hannah Rogers Kent. His father was a lawyer of some distinction; and the son, after graduating from Yale College in 1781, entered upon the study of law, was admitted to the bar in 1785, and began the practice of his profession at Poughkeepsie. He was elected to the New York Assembly in 1790, 1792, and 1796. He removed to New York City in 1793 and during the same year was chosen to fill the new professorship of law in Columbia College. The early recognition of his abilities by Hamilton, Jay, and other leaders of the Federalist party, to which he had attached himself, led to his appointment and rapid advancement as a judicial officer. In 1797 he became recorder of New York City; a year later he was appointed a justice of the State Supreme Court by Governor Jay. In 1804 he was promoted to the chief-justiceship, and in 1814 to the position of Chancellor, then the highest judicial office in the State. This office he held until 1823, when his age reached the constitutional limit of 60 years and compelled his retirement from the bench. He had won a high reputation both as a common-law and equity judge; and his judicial opinions, printed mainly in Caines's and Johnson's reports, are still regarded as valuable and authoritative expositions of legal and equitable principles. He did more than any other judge of his time to create an American system of equity jurisdiction based on the generous principles of the English Chancery. Upon his retirement from the bench he was reappointed to the professorship of law at Columbia, which had remained unoccupied since his resignation in 1798. He entered upon his academic duties with great enthusiasm, remodeled and expanded the lectures which he had delivered under his previous appointment, and attracted a considerable number of students. Tiring of these duties, as he wrote at a later period, he abandoned them in 1826 and published a portion of his lectures in the form of volumes first and second of his famous *Commentaries upon American Law*. A third volume was added in 1828, and the fourth appeared in 1830. It has been said of these commentaries that they have had a deeper and more lasting influence in the formation of the national character than any other secular book of the last century excepting Blackstone's *Commentaries on the Laws of England*. They have passed through 14 editions and continue to rank as a legal classic. Kent died in New York City Dec. 12, 1847. Kent Hall, the building of the Law School of Columbia University, is named for him. Consult William Kent, *Memoirs and Letters of Chancellor Kent* (Boston, 1898).

KENT, WILLIAM (1684-1748). An English architect, especially of gardens, born in Yorkshire. He was apprenticed to a coach painter, but afterward studied painting in London and finally found patrons, who in 1710 sent him to Italy. While in Rome, he met the Earl of Burlington, under whose roof he lived, and in consequence of whose patronage he flourished after he returned to England. He had little success as a painter. Hogarth considered him a "contemptible dauber," and Walpole disliked his pictures and decorations, but styled him the "father of modern gardening." He was the first

landscape architect to vindicate the natural as against the artificial that had previously dominated, being, as Walpole said, "painter enough to taste the charms of landscape, bold and opinionative enough to dare to dictate, and born with a genius to strike out a great system from the twilight of imperfect essays." He was very popular in society, and his taste in art influenced the clothes, decorations, and furniture of the day. As a sculptor, he made the mediocre statue of Shakespeare in the Poets' Corner at Westminster Abbey. Among buildings designed by him are the seat of the Earl of Leicester at Holkham, the country houses of Stowe and Houghton, Devonshire House in Piccadilly, the Horse Guards at Whitehall, and an improvement in Kensington Palace. With the Earl of Burlington, he published *The Designs of Inigo Jones* (1727).

KENT, WILLIAM (1851-). An American mechanical engineer. He was born in Philadelphia and graduated (M.E.) from Stevens Institute of Technology in 1876. Between 1879 and 1890, when he established himself as a consulting engineer in New York City, he was mechanical engineer and superintendent for various industrial concerns. In 1903-08 he was dean of the College of Applied Science at Syracuse University. The circumstances connected with his leaving Syracuse attracted considerable attention in educational circles at the time. (Consult *Science*, vol. xxviii, New York, 1908.) He lectured on steam engineering at various other universities and technical schools. In addition, he patented some 20 inventions on smokeless furnaces, water-tube boilers, and weighing machines, served as editor of the *American Manufacturer and Iron World* (1877-79), associate editor of the *Engineering News* (1895-1903), and editor of *Industrial Engineering* after 1910, and is author of *The Strength of Materials* (1879, 2d ed., 1890); *Strength of Wrought Iron and Chain Cables* (1879), a standard *Mechanical Engineer's Pocket Book* (1895; 8th ed., 1910), *Steam-Boiler Economy* (1901); *Investigating an Industry* (1914).

KENT, WILLIAM (1864-). An American born in Chicago. He moved to his parents in 1871, graduated from Yale University in 1887; and then looked after his father's business interests in Chicago. In 1890 he entered into a partnership with his father (who died in 1901) under the name of A. E. Kent & Son, the firm dealing extensively in real estate and cattle. Later he became president of the Golconda Cattle Company of Nevada and the Kent-Jordan Company of North Carolina. He served as a member of the Chicago City Council (1895-97) and as president of the Municipal Voters' League (1899-1900). Moving to California in 1907 he was elected as an insurgent Republican to the 62d Congress (1911-13) and was reelected as an Independent in 1912 and 1914. He was actively interested in social and civic improvement.

KENTIGERN, kén'ti-gěrn, SAINT. See MUNGO, SAINT

KENTISH PLOVER. A plover (*Charadrius cantianus*, or *alexandrinus*) resembling the ringed plover and widely distributed in Europe and Asia. It is well known on the south coast of England, where it sometimes breeds. See PLOVER.

KENT ISLAND. The largest island in

Chesapeake Bay, situated east of Annapolis (Map: Maryland, G 3). It belongs to Queen Anne Co., Md., is 15 miles long by 5 miles wide, and is the centre of important oyster fisheries. Pop., 1900, 2525; 1910, 2262. Kent Island was colonized in 1631 by adventurers from Virginia and is the site of the earliest settlement in Maryland. See CLAIBORNE, WILLIAM.

KENTON. A city and the county seat of Hardin Co., Ohio, on the Scioto River, 59 miles northwest of Columbus, on the Toledo and Ohio Central, the Cleveland, Cincinnati, Chicago, and St. Louis, and the Erie railroads (Map: Ohio, C 4). It has farming and lumbering interests and manufactures of iron, iron fence, hardware, cakes and candies, toys, tools, etc. Among the more prominent structures may be mentioned the courthouse, city buildings, county jail, public library, and armory. In Kenton is found the highest point of the dividing ridge from which the waters on the north side flow into Lake Erie, and on the south into the Gulf of Mexico. Settled in 1833, Kenton was incorporated in 1885, the charter of that year now operating and providing for a government vested in a mayor, elected every two years, and a unicameral council. The city owns and operates its water works. Pop., 1900, 6852; 1910, 7185.

KENTON, SIMON (1755-1836). An American pioneer and Indian fighter, born in Fauquier Co., Va., of Scotch-Irish parentage. He received a scanty education and in 1771, after having, as he supposed, killed a companion in a fight, crossed the Alleghenies to the headwaters of the Ohio, where he assumed for a time the name of Simon Butler and became an Indian trader. Here he was associated with Simon Girty (q.v.), the renegade. During Lord Dunmore's War (q.v.) he served as a scout. Later in the frontier warfare that raged throughout the States of Ohio and Kentucky during the Revolution, Kenton served with great distinction under Boone and Clark, his fame as a frontier hero being second only to that of Boone himself. In 1778 he joined Clark at the Falls of the Ohio (Louisville) and went with him on his expedition to Kaskaskia. Later he was taken prisoner by the Indians, suffered indescribable tortures, and was twice saved from the stake by the intercessions of his old companion, Girty, and of Logan, the Mingo chief. Handed over finally to the British at Detroit, he escaped from there and made his way southward, where he continued active in the border warfare until the end of the war. After the battle of Blue Licks he settled at Maysville, Ky., served again in Wayne's campaign in 1793-94, and, after living in retirement for some years, he emerged for a short interval in 1813 to take part with the Kentucky volunteers in the Canadian campaign and was present at the British defeat on the Thames. His last years were spent in poverty in Kentucky. Consult McDonald, *Biographical Sketches of General Nathaniel Masse . . . and General Simon Kenton* (Dayton, Ohio, 1852), and C. H. L. Johnston, *Famous Scouts* (Boston, 1910), in popular narrative style.

KENT'S HOLE. A famous archaeological station near Torquay, Devonshire coast, England, yielding rude chipped and bone implements of Paleolithic type. As early as 1825 the cave was explored by MacEnery, again in 1840 by Godwin Austen, and in 1864 by Pengelly and Vivian, acting under a committee of the British Association. The deposits, in descending order,

were: (1) large blocks of limestone cemented here and there with stalagmite; (2) a layer of black mold 3 to 12 inches thick; (3) stalagmite 1 to 3 feet thick, almost continuous; (4) red cave earth varying in thickness and containing about 60 per cent of broken limestone, with bones of the horse and of animals at the present day extinct in the vicinity—mammoth, rhinoceros, wolf, and lion—and rude stone implements, (5) above the red clay and below the stalagmite in one part of the cave a thin sheet of black earth containing charcoal, flint scrapers, barbed harpoon heads, and other implements in bone and antler, besides the bones and teeth of animals. From the upper layer were taken relics of polished stone, copper, bronze, pottery of Roman times, and human bones supposed to prove cannibalism. Consult Evans, *Ancient Stone Implements of Great Britain* (New York, 1872).

KENTUCKY. One of the south-central States of the American Union, lying between the Appalachian Mountain system and the Mississippi River. It is bounded on the north by Illinois, Indiana, and Ohio, the boundary being the north shore of the Ohio River; on the northeast by West Virginia, the boundary being the middle of Big Sandy River and Tug Fork; on the southeast by Virginia, on the south by Tennessee; and on the west and northwest by Missouri and Illinois, the middle of the Mississippi River being the west boundary. It extends from lat. 36° 29' 51" N. to 39° 9' N. and from long. 81° 57' 50" W. to 89° 32' 29" W. Its greatest length from east to west is nearly 425 miles, its extreme breadth is 175 miles, and its area is 40,598 square miles, of which 417 miles are water.

Topography. The surface slopes gently to the west and northwest to the Ohio and the Mississippi rivers and may be divided into three parts. The first is a mountainous region that occupies the southeastern third of the State and forms the northward continuation of the Cumberland plateau of Tennessee. Here, however, its surface has been carved by streams into an intricate maze of narrow, steep-sided ridges separated by equally narrow, deep valleys. The ridges have an average elevation of about 2000 feet, though southeastward some rise to 4000 feet or slightly more along the Virginia line, while to the northwest they decline to 1500 feet or less and are more rounded and subdued. The main valleys in the mountains vary from 600 to 1500 feet above sea level.

The second topographic division extends from the mountain region westward, across the southern half of the State, to the Mississippi River and is a continuation of the highland rim of Tennessee. Its east border is irregular in outline and has an elevation of about 1000 to 1200 feet, while its western end along the Mississippi is only about 500 feet above the sea. Parts like the "barrens" between Green and Cumberland rivers are level; other parts are rolling to hilly. In certain parts of it sink-hole basins are a prominent feature. Some of the Mississippian limestone is very soluble, and many caverns have been formed in it, one of which, Mammoth Cave (q.v.), is the largest known cave in the world. The part west of the Tennessee River is a portion of the Gulf coastal plain.

The third division is the Lexington plain, or the blue-grass region, a circular area 90 to 110 miles in diameter in the north-central part of the State, having a gently rolling surface and

an elevation of 600 to 1000 feet. It is surrounded on the east, south, and west by the highland rim division, which rises often sharply 100 to 200 feet above its level.

The drainage system of the State is well developed and includes a number of navigable rivers and innumerable smaller tributary streams. The Mississippi flows for 80 miles along the western border and receives the entire drainage of the State, over 95 per cent of which enters it by way of the Ohio. This latter stream flows along the entire northern border of the State in a winding course of nearly 600 miles and with its larger tributaries, the Tennessee, Cumberland, Green, Salt, Kentucky, Licking, and Big Sandy, forms a highly important system of inland navigation. Millions of tons of coal pass down the Ohio annually. In their lower courses the Tennessee and the Cumberland flow northward across western Kentucky only a few miles apart. The middle course of the Cumberland is in Tennessee, but its upper portion is in southeastern Kentucky. In the limestone cavern region, which is best developed in the Green River valley, much of the drainage is through underground channels. The only lakes are the miniature ones in sink-hole basins.

Geology. Except for a few very small igneous dikes in Elliott and Crittenden counties, the rocks of the State are entirely sedimentary. The oldest rocks are Ordovician limestones that have been uparched into a very low broad dome which has been unroofed by erosion and now forms the Lexington plain or blue grass region. This is encircled on the east, south, and west by a narrow belt of Silurian limestones and Devonian shales and limestone, and about these there are Mississippian shales and limestones forming a narrow belt east of the Lexington plain but flooring a large area south and west of it. Pennsylvanian rocks, consisting of sandstones, shales, and numerous thick coal seams, form the southeastern mountain region and a part of the highland rim in western Kentucky. The Gulf coastal plain region west of the Tennessee River consists of unconsolidated sands and clays. Of these a narrow belt just west of the Tennessee River is of Cretaceous age; the rest are of Eocene age. Over this region there is a thin surface deposit of Lafayette gravel and along the Mississippi and the lower course of the Ohio loess deposits form a belt some miles in width. Pleistocene silts and recent alluvium form the flood plains of the streams. The rocks of the highland rim are flat-lying, as are those of the southeastern mountain region except along Cumberland and Pine mountains, where they have been faulted and thrust up on edge.

Soils. The most fertile soils are the well-drained flood plains of the larger streams. The blue-grass region also possesses a soil of wonderful fertility and yields abundant crops of grass, grain, fruit, tobacco, and hemp. It is underlain by phosphatic limestones whose gradual disintegration supplies the elements necessary to maintain a high degree of fertility. The soils of the highland rim are diversified. Some parts have sandy to clay loam soils that when calcareous are quite fertile, but when leached of lime may be poor. The hilly region adjacent to Indiana and Illinois has fertile loess-loam soils. The soils west of the Tennessee River consist mostly of a common clay, containing carbonate of lime and a sandy loam. In

much of the mountain region the soils are thin; but in coves, on mountain-side benches, and in occasional flood-plain areas rich soils are found. The eastern or mountainous section is largely forested with hardwoods.

Climate. The rolling to hilly surface gives protection from severe winds and makes the climate more agreeable than it is in the more open prairie States in the same latitude. The mean annual temperature varies from 55° F or slightly less in the mountains in the east to nearly 60° F. in the west.

In the summer the temperature usually rises to 100° F. or above and in winter often falls for a few days to zero and sometimes goes 5° or 10° below, but periods of extreme heat or cold are of short duration. Sudden changes are somewhat frequent. Thunderstorms accompanied by hail and high winds sometimes occur in the spring and summer, but the area affected is nearly always quite small. Tornadoes are rare. The rainfall varies from about 40 inches in the northern counties to about 53 inches in the southeast. It is well distributed through the year, but is slightly above the average in spring and slightly below it in autumn. Snow occurs every winter, but is more frequent in the mountains and is rarely deep anywhere.

Forests. Kentucky was originally completely covered with forests, except for a few "barrens" in the central portion, but now about 60 per cent of the area is cleared, and the remaining forests have been pretty well culled. About nine-tenths of the trees were (and are) deciduous hardwoods—a fact correlated with the fertility of the soil. Pines and other evergreens are chiefly confined to the rocky and mountainous portions.

The relative abundance of the more important trees is indicated roughly by the statistics of lumber production collected for the thirteenth census.

These are as follows: oak of various species (nearly half the total), yellow poplar (or tulip tree), red (sweet) gum, hickory (several species), yellow pine (meaning mostly short-leaf pine), beech, chestnut, hemlock, ash (several species), elm, basswood, maple, sycamore, cypress (in extreme western portion), walnut (central portion mostly), white pine (in mountains), spruce (in mountains), cottonwood, birch, cedar, cherry, tupelo gum (western portion).

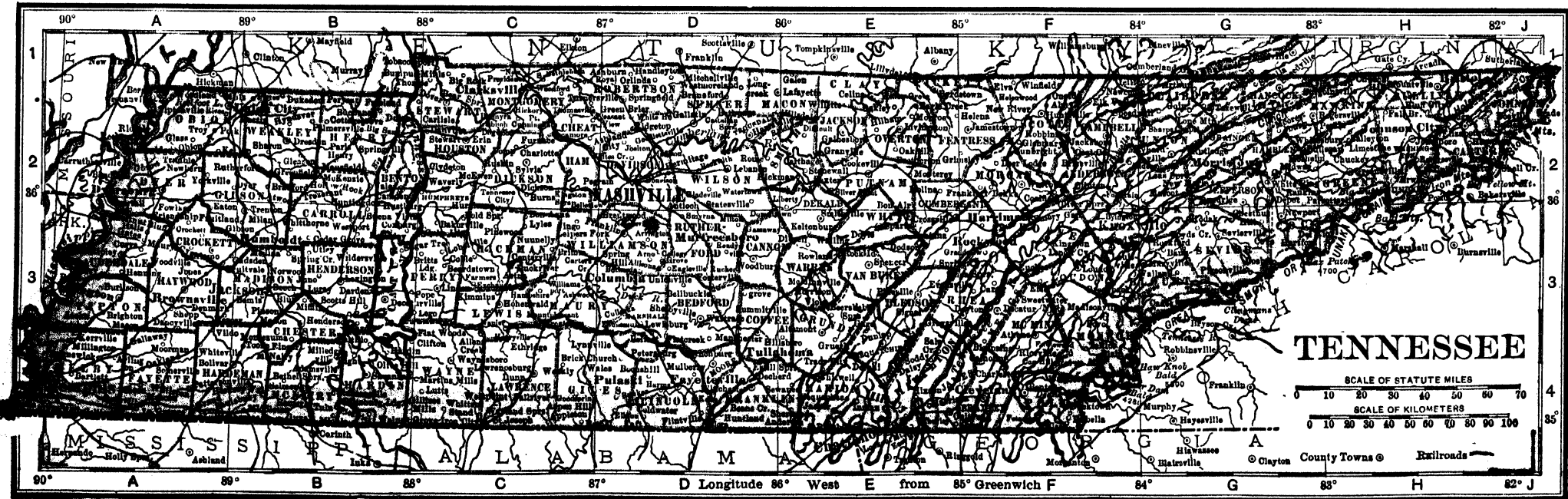
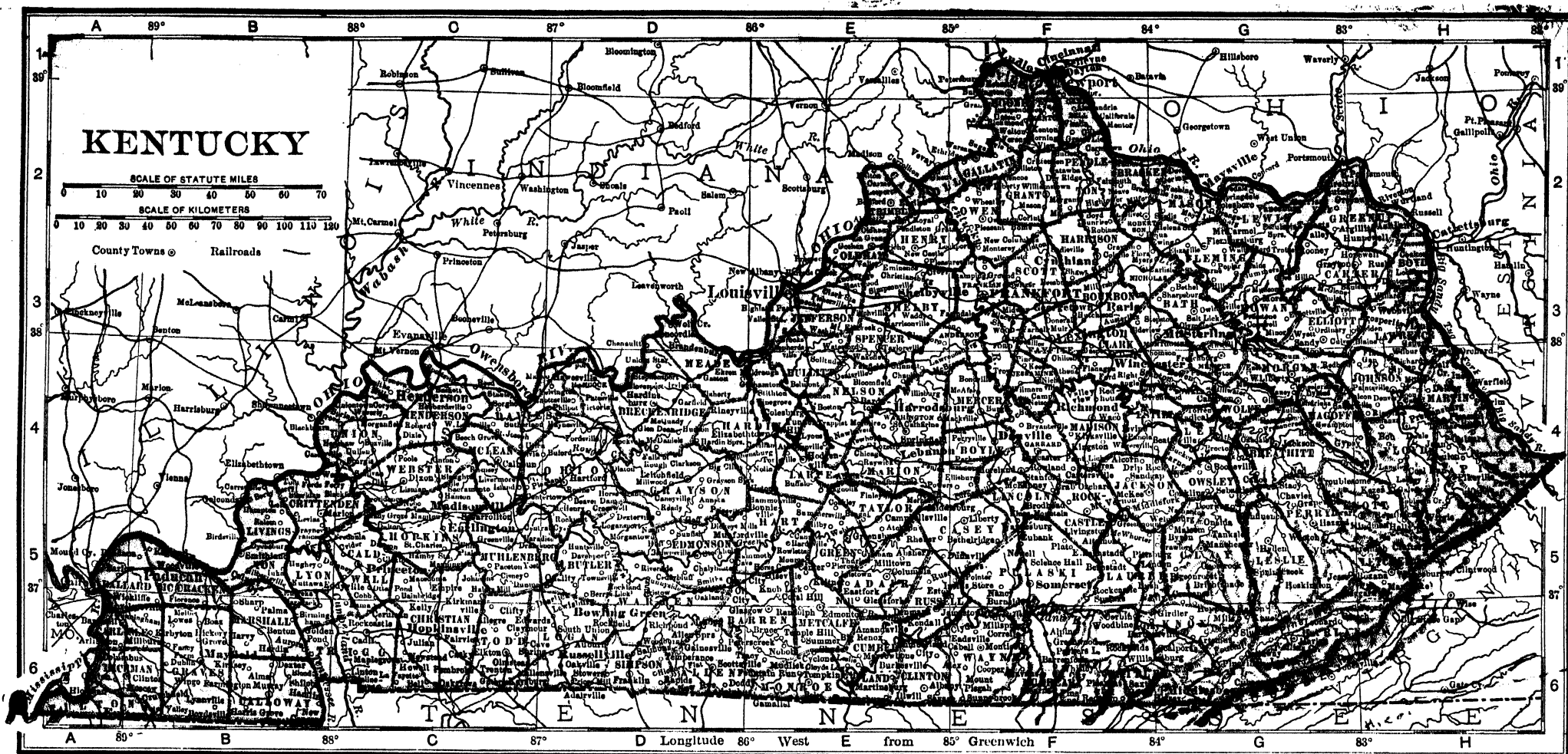
Mining. Coal is the principal mineral product.

Its value, \$20,516,749, constituted in 1913 about three-fourths of the total mineral output.

Kentucky is distinctive in containing areas belonging to two great coal fields.

The one, in the extreme east, belongs to the Appalachian system, the other, in the northwest, to the eastern interior field. In 1913 there were 26,332 men employed in the coal mines, and out of a total production of 19,616,600 tons 14,353,583 tons were machine-mined. The State was the third to enter the field of regular producers of coal; the first coal produced was mined in 1827.

The clay-working industry is second in importance, with manufactured products valued at \$2,914,276 in 1913. The principal products were fire brick and other forms of refractory material made from fire clay. Quarrying is next. The total product in 1913 was valued at \$1,150,205. Petroleum is also produced, and in 1913 the value of the output of 524,568 bar-



rels was \$675,748. The value of the natural gas produced in 1913 was \$509,846. Kentucky ranks second among the States in the production of fluor spar. Other mineral products are asphalt, cement, iron ore, lead, lime, mineral paints, oil stones, sand and gravel, sand-lime brick, and zinc. The total value of the mineral products in 1913 was \$26,845,579.

Agriculture. The State is admirably adapted for agriculture. The approximate land area is 25,715,840 acres, and of this, in 1910, 22,189,127 acres were in farms and 14,354,471 acres in improved land. The total number of farms in 1910 was 259,185, and the average acreage was 85.6. In 1910 the total value of farm property, including land, buildings, implements, and machinery, domestic animals, poultry, and bees, was \$773,797,880. In that year the value of all property per farm was \$3,115.00; the average value of land per acre was \$21.83. The average size of farms decreased continuously from 226.7 acres in 1850 to 85.6 acres in 1910. In the first half of the century the "plantation" was the common farm unit and had not disappeared entirely in 1870. During the last 40 years most plantations have gradually been divided into small parcels of land, largely operated by tenants. While the total number of farm operators increased 55.7 per cent from 1880 to 1910, the number of tenant farms increased 99.6 per cent. The total acreage owned, operated, or leased by white farmers in 1910 was 21,748,350, by colored farmers, 440,777. The average size of farms operated by white farmers in 1910 was 87.9 acres, which was twice as large as that of farms operated by colored farmers, 37.6 acres. In 1910 the total number of farms owned in whole or in part by the operators was 170,332. The native white farmers in 1910 numbered 245,499; foreign-born white farmers, 1956, and negro and other non-white farmers, 11,730.

The more important details in regard to the principal crops in 1913 are shown in the following table, as estimated by the United States Department of Agriculture:

CROPS	Acreage	Prod bu	Value
Corn	3,650,000	91,250,000	\$58,400,000
Oats	135,000	3,675,000	1,948,000
Wheat	760,000	12,540,000	12,916,000
Barley	5,000	142,000	109,000
Rye	22,000	301,000	286,000
Hay	750,000	*712,000	11,392,000
Potatoes	50,000	2,250,000	1,890,000
Sweet potatoes and yams	10,000	1,050,000	808,000
Tobacco	400,000	†364,000,000	30,576,000

* Tons

† Pounds

The total value of crops in 1909 was \$138,973,000, and the combined acreage was 6,046,819, representing 42.1 per cent of the total improved land in farms. The general character of the agriculture in Kentucky is indicated by the fact that somewhat more than two-fifths of the total value of crops in 1909 was contributed by the cereals and somewhat more than one-fourth by tobacco. The remainder, representing 27.6 per cent of the total, consisted mostly of potatoes and other vegetables, hay and forage, forest products, and fruits and nuts. Corn is grown most largely in the northern and north-

eastern sections along the Ohio River and in the central portion from the north to the south boundaries.

The acreage of tobacco had gained appreciably from 1879. In that year it was 226,120. This increased steadily, and the acreage in 1909 was 469,795. Tobacco is grown mostly in the counties lying in a stretch across the State from the northeast to the southwest boundaries. The annual tobacco crop has ranged from one-third to one-half of the total for the United States. The average yield per acre in 1914 was 910 pounds, and the average value per acre was \$76.44. The growing of tobacco in the State in the early part of the present century was accompanied by industrial disturbances. (See paragraphs on *History* below.)

In 1909 the total acreage of potatoes and other vegetables was 182,639, and their value \$11,800,000. Including potatoes and sweet potatoes and yams, the acreage of vegetables was 115,007, and the value \$8,287,000. The raising of flowers and plants and of nursery products is of some importance. In 1909 the value of these was \$508,372. The orchard fruit trees of bearing age in 1910 numbered 8,722,441, and from these there were produced 9,447,858 bushels of fruit, valued at \$4,506,950. The most important fruit is the apple, and second in point of value are peaches. In 1909 there were grown 3,680,182 pounds of grapes, valued at \$137,326. Of small fruits there were produced, in 1909, 4,972,702 quarts, valued at \$357,597.

Kentucky produces about nine-tenths of the hemp of the United States. The acreage devoted to this crop in 1909 was 6855, and the production was 6,420,232 pounds, valued at \$348,386, being greatest in the vicinity of Lexington and in the adjacent counties to the south. (For a graphic account of hemp culture in Kentucky, see chapter I of James Lane Allen's novel, *The Reign of Luc*.) Cotton is grown on a small scale in the extreme southwest corner. There were produced, in 1909, 3469 bales, valued at \$223,024. The acreage devoted to cotton was 7811. Sorghum cane forms an important crop. In 1909, 62,327 acres were devoted to this. The product was 226,303 tons, valued at \$1,416,565. From this 2,733,683 gallons of sirup, valued at \$1,216,426, were made.

Live Stock and Dairy Products. The excellence of the forage in certain portions, the large production of corn, and the favorable climate have made stock raising an important industry. Kentucky is famous for its horses, and there has been developed a breed of road horse which is probably the best known and most highly valued of any American breed. Many of the fastest American horses were bred in the famous blue-grass region. No other part of the United States has so many farms devoted to the raising and breeding of horses. The total value of live stock in 1910 was \$112,605,412. According to the estimates of the United States Department of Agriculture, cattle other than milch cows on Jan 1, 1915, numbered 543,000, valued at \$16,507,000, milch cows, 390,000, valued at \$17,745,000, horses, 443,000, valued at \$42,085,000; mules, 231,000, valued at \$24,486,000; swine, 1,582,000, valued at \$11,390,000; sheep, 1,229,000, valued at \$5,162,000. The fowls of all kinds in 1910 numbered 8,764,204, with a value of \$4,461,871.

Dairy products, including milk, cream, butter fat, butter, and cheese, in 1909 were valued at

\$9,055,813. The milk produced was 125,566,917 gallons, and the butter made was 38,130,687 pounds, valued at \$7,117,905. The milk sold was valued at \$1,793,142.

Forest Products. In 1910, 91,051 farms reported forest products, which include firewood, fencing material, logs, railroad ties, telegraph and telephone poles, etc. The total value of these products was \$7,843,142. Of the value, \$3,581,244 was that of products used or to be used on the farms themselves, \$3,237,101 of products sold or for sale, and \$1,024,797 the amount received for standing timber. These figures do not include those of forest products not produced on farms. The total quantity of rough lumber cut in 1909 was 860,712 thousand feet. This was chiefly hardwood—oak and yellow poplar. There were also sawed, in 1909, 19,776 thousands of lath and 55,010 thousands of shingles.

Manufactures. Kentucky is notably an agricultural State, but its manufacturing indus-

tries are important and have increased steadily from the middle of the nineteenth century. Growth is shown by the fact that in 1849 the total value of the industries, including the products of the neighborhood and hand industries, amounted to only \$21,710,000, while in 1909, exclusive of the products of the neighborhood and hand industries, it was more than 10 times as great, amounting to \$223,754,000. From 1849 to 1909, however, the proportion which the manufactures of the State represented for the total value of the products of manufacturing industries in the United States decreased somewhat. This proportion was 2.1 per cent in 1849 and but 1.1 per cent in 1909. In 1909 Kentucky ranked twentieth among the States in gross value of manufactured products. The following table gives the most important details in regard to industries in 1909, compared with 1904. Only those industries whose product in 1909 was valued at more than \$1,000,000 are included in this table.

COMPARATIVE SUMMARY FOR 1909 AND 1904
THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES

INDUSTRY	Cen- sus	Num- ber of estab- lish- ments	PERSONS EN- GAGED IN INDUSTRY		Capital	Wages	Cost of mate- rials	Value of prod- ucts	Value added by manu- fac- ture
			Total	Wage earners (aver- age num- ber)					
All industries	1909 1904	4,776 3,734	79,060 69,755	65,400 59,794	\$172,779 147,282	\$27,888 24,439	\$111,779 86,545	\$223,754 159,754	\$111,975 73,209
Boots and shoes, including out stock and findings	1909 1904	13 9	570 720	426 659	1,700 756	171 200	2,444 1,360	3,248 1,930	804 570
Bread and other bakery products	1909 1904	286 237	1,433 1,056	985 744	2,198 1,114	485 350	1,946 1,400	3,338 2,225	1,392 825
Brick and tile	1909 1904	82 88	1,267 1,277	1,125 1,114	2,160 1,563	400 362	234 176	1,015 887	781 711
Canning and preserving	1909 1904	36 16	876 607	653 520	1,562 724	177 101	1,093 706	1,857 1,096	764 390
Carriages and wagons and materials	1909 1904	161 131	3,263 3,110	2,777 2,734	7,759 5,309	1,164 1,104	2,713 2,814	5,141 5,505	2,428 2,691
Cars and general shop construction, repairs by steam-railroad companies	1909 1904	24 24	5,887 4,773	5,605 4,588	5,600 2,413	3,240 2,525	2,900 2,956	6,535 5,739	3,635 2,783
Clothing, men's, including shirts	1909 1904	123 141	4,399 4,198	3,849 3,759	3,746 4,870	1,184 1,055	3,276 3,381	6,052 6,433	2,711 3,052
Confectionery	1909 1904	24 16	827 716	685 626	811 485	219 157	1,281 785	2,257 1,454	976 669
Cooperage and wooden goods, not elsewhere specified	1909 1904	49 57	972 1,168	878 1,053	2,729 1,375	394 348	1,703 2,093	2,648 2,973	945 880
Copper, tin, and sheet-iron products	1909 1904	50 39	595 507	464 414	784 411	229 174	1,685 308	2,243 728	558 420
Cordage and twine and jute and linen goods.	1909 1904	6 3	778 475	751 452	1,505 943	225 115	709 307	1,080 598	371 291
Cotton goods, including cotton small wares	1909 1904	4 4	1,066 1,056	1,044 1,031	1,917 2,156	307 243	1,188 1,165	1,902 1,565	714 400
Flour-mill and gristmill products	1909 1904	440 388	2,426 2,244	1,401 1,373	9,010 7,342	591 515	18,664 15,099	22,365 18,008	3,701 2,909
Foundry and machine-shop products	1909 1904	129 85	5,174 3,045	4,479 2,672	9,906 5,110	2,402 1,212	4,735 2,541	9,627 5,349	4,892 2,808
Furniture and refrigerators.	1909 1904	32 34	1,233 1,206	1,095 1,103	1,350 1,220	444 438	770 659	1,671 1,496	901 837
Gas, illuminating and heating.	1909 1904	15 17	500 509	386 417	5,789 5,391	206 192	315 264	1,004 961	689 697
Ice, manufactured	1909 1904	78 48	645 444	472 345	4,108 1,816	243 152	307 139	1,135 703	828 564

INDUSTRY	Cen- sus	Num- ber of estab- lish- ments	PERSONS EN- GAGED IN INDUSTRY		Capital	Wages	Cost of mate- rials	Value of prod- ucts	Value added by manu- fac- ture
			Total	Wage earners (average num- ber)					
Iron and steel, steel works and rolling mill	1909	7	2,437	2,372	\$4,178	\$1,273	\$5,561	\$7,779	\$2,218
	1904	8	2,220	2,149	4,716	1,272	4,217	6,168	1,951
Leather goods. . .	1909	33	1,068	814	1,356	389	1,427	2,373	946
	1904	47	985	826	1,254	373	1,073	2,071	998
Leather, tanned, curried, and finished	1909	18	724	630	5,970	308	3,224	4,241	1,017
	1904	20	802	728	4,429	327	2,807	3,952	1,145
Liquors, distilled . . .	1909	206	3,158	2,539	22,452	728	8,601	44,360	35,750
	1904	188	1,936	1,428	17,774	554	4,778	11,205	6,427
Liquors, malt . . .	1909	19	1,282	1,012	8,893	532	1,271	4,949	3,678
	1904	20	966	747	6,900	471	898	3,674	2,776
Lumber and timber products .	1909	1,592	15,800	13,042	20,884	4,382	10,456	21,381	10,925
	1904	960	14,392	12,407	16,495	4,882	8,797	20,565	11,768
Marble and stone work	1909	75	676	510	875	261	350	1,060	710
	1904	43	481	397	573	211	232	734	502
Paint and varnish . . .	1909	17	272	146	1,150	79	1,213	1,962	749
	1904	13	199	143	591	59	565	1,023	458
Patent medicines and compounds and druggists' preparations	1909	49	519	280	1,151	93	756	2,123	1,367
	1904	35	395	208	1,369	73	529	1,770	1,241
Pottery, terra-cotta, and fire-clay products	1909	19	1,429	1,319	2,340	538	382	1,470	1,088
	1904	21	1,406	1,312	1,518	456	347	1,247	900
Printing and publishing	1909	431	4,577	3,135	5,546	1,690	1,645	6,454	4,809
	1904	398	3,678	2,588	4,784	1,291	1,171	4,807	3,636
Slaughtering and meat packing	1909	37	446	354	1,269	251	5,746	6,568	822
	1904	22	548	472	1,464	243	4,595	5,694	1,099
Tobacco manufactures	1909	226	4,877	3,973	11,019	1,432	8,425	18,598	10,173
	1904	238	4,500	3,969	22,691	1,226	5,914	14,913	8,999
Woolen, worsted, and felt goods, and wool hats	1909	14	858	818	1,646	241	858	1,278	420
	1904	21	990	917	1,936	261	775	1,273	498

Although a few industries predominate greatly in importance in the State, there is considerable diversity in manufacturing activities. The most important single industry is the manufacture of distilled liquors, in the production of which Kentucky held second place in 1909. In that year the value of the product was \$44,360,000, or 21.7 per cent of the total reported for the country. The distilling of liquors began practically in the earliest period. In 1794 a large number of distillers removed to Kentucky from Pennsylvania as a result of the whisky rebellion. The product took the name of the county in which most of them settled, Bourbon. The group of industries second in importance and value of products is that related to flour-mill and gristmill products. These show an increase of 71.8 per cent for the decade 1899-1909. With the exception of the lumber industry there were more establishments engaged in the manufacture of flour-mill and gristmill products in 1909 than in any other industry. The lumber and timber industry ranks third. This includes the logging plants, the chief products of which are logs and bolts, sawmills, shingle mills, and planing mills, producing rough lumber, shingles, logs, cooperage stock, sash, doors, blinds, interior finish, and other millwork, and the wooden packing-box factories. The importance of the industry is indicated by the fact that it gave employment in 1909 to more than twice as many wage earners as any other industry. The manu-

factures of tobacco occupy fourth rank in the value of products. These include establishments engaged in the manufacture of cigars, cigarettes, chewing and smoking tobacco, and snuff. The factories of Kentucky are engaged chiefly in the manufacture of chewing and smoking tobacco and snuff. Kentucky is the leading tobacco-growing State in the Union (see *Agriculture*, above) and was one of the first States to engage in tobacco manufactures on a factory basis. The industries related to iron and steel are of great importance. Because of the extensive iron-ore deposits which exist in about one-fourth of the counties of the State, the manufacture of iron and steel was one of the first industries to be developed. There were seven steelworks and rolling mills in the State in 1909.

The wage earners included 55,636 males and 9764 females. For the great majority of wage earners employed in the manufacturing industries the prevailing hours of labor in 1909 ranged from 54 to 60 a week, inclusive. Although cities of 10,000 inhabitants or over contained only 17.6 per cent of the total population and 32.7 per cent of all manufacturing establishments in 1909, the establishments located in such cities gave employment to 61.1 per cent of all wage earners and reported 59.8 per cent of the total value of products. Louisville (q.v.), the largest city, and Covington (q.v.) are important manufacturing centres. Other cities of industrial importance are Newport, Paducah,

Owensboro, Frankfort, Henderson, and Lexington. Details of these cities are given under the individual articles.

Transportation. The State has excellent transportation facilities both by land and water. Transportation on the latter is furnished by the Mississippi, Ohio, Cumberland, and Tennessee rivers and by a number of smaller navigable streams. The Federal government has made some improvements. Transportation on the Ohio has been much improved by the construction of a canal around the falls at Louisville. A considerable portion of the eastern half of the State is broken and mountainous, and large districts are untouched by railroads. The principal period of railroad construction was between 1880 and 1890, when the mileage increased from 1530 to 2942. On June 30, 1913, the mileage of steam railroads was 3789, and the mileage of electric railways was 493 in 1912. The longest lines are the Louisville and Nashville, the Illinois Central, the Cincinnati, New Orleans, and Texas Pacific Railway, the Chesapeake and Ohio, the Louisville, Henderson, and St. Louis, and the Southern Railway. The State has a railroad commission which has power to hear and determine complaints and to regulate railroad rates. There were, in 1913, 183 miles of interurban railroad.

Banking. The first bank chartered in the State was the Bank of Kentucky, chartered at Frankfort, in 1806, with a capital of \$1,000,000. Branches were organized in other towns. The State owned a part of the shares and was therefore interested in it. The first general banking act was passed in 1818. This authorized the establishment of 40 banks, to which six were added in 1819. As a result of extensive credit given with real estate as security, the Bank of Kentucky and several others fell into financial difficulties in 1819. In the following year the Bank of the Commonwealth in Kentucky was established. This was a State institution. Its profits were to go to the State, and its notes were made legal tender. In order to assist the bank, the Legislature repealed the charter of the Bank of Kentucky in 1822. The Bank of the Commonwealth was unsound, and its notes became of little value. The institution went into liquidation in 1829. For a time the only banks in the State were the branches of the Bank of the United States. In 1834, however, three large banks were chartered. These had an aggregate capital of \$13,000,000, and for a period they flourished. In the crisis of 1837 all suspended specie payment and until 1844 were in a very precarious condition. The banking system underwent another critical period in 1854, when 27 banks failed. From 1890 to 1893 many smaller banks failed, when larger institutions were undisturbed. There were, in 1913, 135 national banks, with a capital of \$12,195,900 and deposits subject to check amounting to \$43,223,190. There were 416 State banks, with deposits subject to check amounting to \$33,840,404 and savings deposits amounting to \$10,666,512. There were also 15 State stock savings banks, with 12,665 depositors, deposits subject to check amounting to \$1,791,670, and savings deposits amounting to \$3,750,446. In addition there were 45 loan and trust companies, with deposits subject to check aggregating \$8,176,990 and savings deposits amounting to \$4,219,665.

Government. The present constitution was

adopted in 1891. The State has been governed under three previous constitutions—those of 1792, 1799, and 1850. Amendments to the constitution may be proposed in either House, and if they receive a three-fifths vote of all the members elected to each House they are submitted to the popular vote. If a majority is cast in favor of them, they then become a part of the constitution. A majority of each House concurring at two consecutive sessions to a proposal to call a constitutional convention, it is submitted to a vote of the people, and if approved by a majority of those voting, provided the number is equal to one-fourth of the qualified voters who voted at the last preceding election, a convention will be called.

Legislative.—Legislative power is vested in the House of Representatives and the Senate, jointly known as the General Assembly. There are 100 Representatives, elected for two years, and 38 Senators, elected for four years. Regular sessions are limited to 60 legislative days. The Legislature meets on the first Tuesday after the first Monday in January of even years.

Executive.—The chief executive power of the State is vested in a Governor, elected for four years. He is not eligible for a succeeding term. The Lieutenant Governor is elected for four years and acts as President pro tempore of the Senate. The other executive officers, also elected for four years, are Auditor, Register of the Land Office, Commissioner of Agriculture, Labor, and Statistics, Superintendent of Public Instruction, Secretary of State, Treasurer, and Attorney-General. If a vacancy occurs in the office of Governor in the first two years of his term, a new election is held. If, however, it occurs during the last two years, the Lieutenant Governor serves out the term.

Judiciary.—The judicial power is vested in a supreme court known as the Court of Appeals, consisting of not less than five nor more than seven judges, elected for eight years. The judge longest in service acts as Chief Justice. Each judicial district has a circuit court, with a judge serving for six years. In each there are also so-called quarterly courts, the judges of which are also justices of the county courts.

Suffrage and Elections.—Every male citizen of the United States is entitled to vote who has resided in the State one year, in the county for six months, and in the precinct 60 days. Women can vote for school and library officers. All general elections are held on the first Tuesday after the first Monday in November. Only district and State officers and members of the municipal legislative boards may be elected in the same year in which members of the House of Representatives in the United States are elected. The Legislature of 1912 passed a primary-election law, revised in 1914, providing for the nomination of candidates at primary elections. This does not apply to candidates for school officers, nor to trustees in towns of the fifth and sixth classes, nor to candidates for presidential electives. Party candidates for the United States Senate are nominated by a preference vote. In 1914 the Legislature passed a measure making provision for the election of Senators in conformity with the national constitutional amendment providing for the direct election of Senators. A political party is defined by this act as an affiliation or organization of electors representing a political policy and having a constituted authority for its government and

regulation, and which, at the last preceding election at which presidential electors were voted for, cast at least 20 per cent of the total vote cast at such an election.

Local and Municipal Government.—Towns and cities of the State are divided into six classes. Those with a population of 100,000 and over constitute the first class, those of 20,000 and less than 100,000, the second; those of 8000 and less than 20,000, the third; those of 3000 and less than 8000, the fourth; those of 1000 and less than 3000, the fifth; those of less than 1000, the sixth. Cities of the first, second, third, and fourth classes are permitted to adopt a commission form of government. At the end of 1913 the cities of Covington, Lexington, Newport, Paducah, Mount Sterling, and Danville had voted for this form of government. Each county has a judge of the county court, a clerk, attorney, sheriff, jailer, coroner, surveyor, and assessor, and in each justice's district one justice of the peace and one constable are elected for terms of four years. Each county has a financial board composed of the county judge and a justice of the peace or of the county judge and three commissioners elected on a general ticket.

Miscellaneous Constitutional and Statutory Provisions.—The marriage of whites and negroes is prohibited. A child-labor law passed in 1908 prohibits children under 14 years of age from working during school terms and restricts the character of employment for all those under 16 years of age. There is an eight-hour day for all laborers and mechanics employed on the public works either of the State or by a public contractor. The sale of liquor is regulated by local-option laws. Previous to 1912 the county unit law exempted cities of 3000 population, but the Legislature in that year extended the law to include all cities in the county vote. The same Legislature passed a measure forbidding the sale of liquors in dry territory. The cities of 5000 or more under no-license on May 1, 1913, were Danville, Mayfield, Richmond, and Bowling Green. On that date there were 91 counties under no-license.

Finance. The report of the State Treasurer for the fiscal year ending June 30, 1913, shows that there was a balance in the Treasury on July 1, 1912, of \$300,549. The receipts for the fiscal year amounted to \$7,666,781. The disbursements for the same period were \$7,605,427, leaving a balance on June 30, 1913, of \$361,903. The bonded indebtedness includes a bill dated July 1, 1897, for \$165,000, to the Agricultural and Mechanical College of Kentucky and the State Normal School for Colored Persons. This bond is a perpetual obligation of the Commonwealth, and the interest is a perpetual charge upon the Treasury. In addition to these, bonds valued at about \$2,300,000 are held by the Board of Education. The total debt in 1913 was \$4,452,000. The debt per capita was \$190, compared with per capita debt of \$162 for the entire United States.

Militia. The organized militia includes a brigade of infantry, composed of the first, second, and third infantry, a detachment of sanitary troops, and a field hospital. There were, in 1913, 1843 enlisted men and 170 officers. The males of militia age, from 18 to 44 years in 1910, numbered 457,493.

Population. The following is the population of Kentucky by decades: 1790, 73,677; 1800, 220,955; 1810, 406,511; 1820, 564,317; 1830,

637,917; 1840, 779,828; 1850, 982,405; 1860, 1,155,684; 1870, 1,321,011; 1880, 1,648,690; 1890, 1,858,635; 1900, 2,147,174; 1910, 2,289,905. The estimated population on July 1, 1914, was 2,350,131. The population per square mile in 1910 was 57. For the three decades ending with 1840 Kentucky held sixth rank among the States in population, but this position has been gradually lowered, until in 1910 it was fourteenth. The urban population (places of 2500 or more) in 1910 was 555,442, while the rural population was 1,734,463. The white population in 1910 was 2,027,941, while the negro population was 261,656. Kentucky, like most of the Southern States, has a small foreign-born population. There were, in 1900, 1,161,709 males and 1,128,196 females. The males of voting age numbered 603,654. There are only two cities with a population of over 50,000, Louisville and Covington. The former had in 1910 a population of 223,928, and Covington had in the same year, 53,270. Other important cities, with their populations in 1910, are Lexington, 35,099; Newport, 30,309; Paducah, 22,760; Owensboro, 16,011; Henderson, 11,452; Frankfort, 10,465. Of the entire population in 1910, 24.3 per cent resided in cities and in incorporated towns having a population of 2500 or over. The capital is Frankfort.

Education. In the development of its educational system Kentucky has encountered problems similar to those of the other Southern States which have a large negro and rural population. Educational development is steadily improving, and in 1910 there were 208,084 illiterates, about 12.1 per cent. Of these, 145,156 were of native parentage, 3300 foreign-born whites, and 57,900 negroes. The percentage of illiteracy among negroes decreased from 40.1 per cent in 1900 to 27.6 per cent in 1910, a much greater gain than was made by the white population. According to the thirteenth census the total school population in 1910 was 755,709. In 1912-13 the rural school population was 596,351, and the city school population was 141,604. The legislatures from 1906 to 1913 passed a number of excellent measures which resulted in an improvement in conditions. The Legislature of 1912 passed a school-inspection law, an act providing for the supervision of rural schools, a measure providing for the raising of standard of qualification and increasing the salary of county superintendents, an act providing for a teachers' salary schedule, a compulsory-attendance law for rural schools, and a measure giving to women the right of school suffrage.

Although the rural schools have made great progress it has not been commensurate with that made by the city schools. This is due to a lack of supervision. The legislation of 1912 tended to offset this and other faults. Prior to the enactment of the compulsory-attendance law in 1912 there was little effort made to enforce such measures for compulsory attendance as were then in the statutes. The State Board of Education has organized school-improvement leagues, and these have produced excellent results. At the end of 1913 nearly 1000 leagues had been formed. The total number of schools for white children in 1912-13 was 7174, and colored schools numbered 794. There were, in 1913, 168 county high schools, in which were enrolled 3909 pupils. Disbursements for educational purposes for rural schools in 1912-13

amounted to \$4,390,507, and \$2,248,964 for city schools. Schools for the education of special classes such as the Institution for the Blind at Louisville, the Kentucky School for the Deaf at Danville, and the Kentucky Institution for Feeble-Minded Children at Frankfort, are maintained. The normal schools are the Eastern Kentucky State Normal School at Richmond, the Western Kentucky State Normal School at Bowling Green, and the Kentucky Normal and Industrial Institute for colored persons at Frankfort. The institutions for higher education are the State University of Kentucky at Lexington, Berea College at Berea, Ogden College at Bowling Green, Central University of Kentucky at Danville, Georgetown College at Georgetown, McLean College at Hopkinsville, Transylvania University at Lexington, University of Louisville at Louisville, Bethel College at Russellville, St. Mary's College at St. Mary, Kentucky Wesleyan University at Winchester. Colleges for women are Liberty College for Women at Glasgow, Beaumont College at Harrodsburg, Bethel Female College at Hopkinsville, Hamilton College for Women at Lexington, Logan Female College at Russellville, and Margaret College at Versailles. Schools for negroes are Bowling Green Academy at Bowling Green, Free Memorial Institute at Camp Nelson, Eckstein Norton Institute at Cave Spring, Danville Polytechnic Seminary at Danville, Wayne Institute at Harrodsburg, Louisville Christian Bible School at Louisville, and the Atkinson Literary and Industrial College at Madisonville.

Charities and Corrections. Charitable and penal institutions include the Eastern State Hospital at Lexington, the Central State Hospital at Lakeland, the Western State Hospital at Hopkinsville, and the Institute for Feeble-Minded Children at Frankfort. As noted in the paragraph on *Education* above, institutions for the education of blind and deaf are also maintained. There are State prisons at Frankfort and Eddyville. There is also a Confederate Soldiers' Home at Pewee Valley. In 1912 a tuberculosis hospital was opened at the Eddyville penitentiary. A tuberculosis hospital was also built in 1912 in the Central Hospital at Lakeland, and a tuberculosis colony was established in 1910 at the Western Hospital at Hopkinsville. The charitable and correctional institutions are under the supervision of the State Board of Control.

Religion. The two religious denominations which are strongest in the other Southern States predominate also in Kentucky, viz., the Baptists and the Methodists, the former having the larger number of members. The Disciples of Christ are also very strongly represented in the State. The most important of the other denominations are Roman Catholics and Presbyterians.

History. Kentucky was originally a portion of Fincastle Co., Va., and was first visited by Dr. Thomas Walker in 1750. Frequent visits followed after 1765, a notable one of these being an exploring expedition made by John Finley and a few companions from North Carolina in 1767. Two years later Daniel Boone and five companions from the Yadkin settlements came to eastern Kentucky, but it was not until 1774 that the first effort to plant a colony was undertaken. In June of that year James Harrod and 40 associates from the Monongahela country made the first permanent settlement in Kentucky. It was located in what is now Mercer

County and was given the name of Harrodsburg. In 1775 Daniel Boone planted a settlement to which he gave the name of Boonesborough. The favorable land policy of Virginia encouraged immigration to the new country, but the settlers soon found themselves in a life-and-death struggle with the Indians, who claimed the land. In 1774 a Virginian force administered a crushing defeat to the Northwestern Indians at Point Pleasant (q.v.), and forced them to cede their claims to their Kentucky lands and to retire beyond the Ohio. In the same year Daniel Boone concluded a treaty with the Cherokees at Wataga by which they sold for 10,000 pounds sterling their flimsy claim to the lands between the Ohio and Cumberland rivers and west and south of the Kentucky River (amounting to 17,000,000 acres, or about one-half the present area of the State) to Richard Henderson and his associates, who styled themselves the Transylvania Company. Virginia claimed the territory in question and refused to recognize the validity of the sale, but the Legislature consented in 1778 to give the company a title to 200,000 acres and to confirm the sales already made to innocent purchasers.

In May, 1775, the first effort at State building was begun. At the call of Colonel Henderson a convention met at Boonesborough and adopted a code of nine laws for the government of the self-constituted Commonwealth, but its work was disallowed by the Legislature of Virginia. The following year, by act of the Legislature, the new country was separated from Fincastle County and organized under the name of Kentucky County, with Harrodsburg as the county seat and with separate representatives in the Virginia Legislature. Meantime struggles with the Indians were almost constantly occurring. In 1782 a desperate battle was fought at the Blue Lick Springs, resulting in the defeat of the whites and the death of over 60 of their men (about one-tenth of the fighting population), among the number being some of the most prominent leaders in Kentucky. By this time agitation for separation from Virginia and independent State government was well under way. There were now three counties in Kentucky and an estimated population of 30,000 inhabitants. In 1784 an informal convention was held at Danville to discuss the question of separation. It was followed by a more regular convention in May, 1785, and a third in August of the same year, both being held at Danville. A petition for separation was sent to the Virginia Legislature, and it was promptly and favorably acted upon, the only condition being ratification by a fourth convention, and the consent of the Congress of the Confederation. In 1787 the fourth convention met to accept the conditions, when the information came that the Legislature had repealed its act to allow separation. This action caused great chagrin among the settlers and led to threats of secession. The discontent was increased by a rumor that the United States had agreed to surrender to Spain the right of navigating the Mississippi River in return for other advantages in which Kentucky would have no share. The intrigues of Spain through the promise of special commercial advantages to induce Kentucky to set up an independent government caused but a trifling flurry. The inhabitants in general stood firmly by the American Union. In November, 1787, a fifth convention met at Danville to discuss the situa-

tion. Meantime a third act of separation was passed. The conditions of this act were such that they were rejected by a sixth convention. Finally a fourth act was passed and a seventh convention met at Danville in July, 1790, and accepted the conditions. By an Act of Feb. 1, 1791, Congress agreed to admit Kentucky to the Union June 1, 1792.

In April, 1792, a ninth convention met at Danville and adopted a constitution of government; Isaac Shelby was chosen as the first Governor, and, after a spirited struggle, Frankfort was chosen as the capital. In July, 1799, a new constitution was adopted which made the Governor and other State officers elective by the people instead of by electors. In the War of 1812 Kentucky took a distinguished part. Seven thousand volunteers, far more than Kentucky's quota, offered their services, and her troops fought gallantly in most of the battles in the northern part of the United States and in Canada, and about one-fourth of Jackson's army at New Orleans consisted of Kentucky riflemen. From the War of 1812 to the Mexican War the chief questions of interest in the history of Kentucky relate to financial and economic measures. Like the other Western States, Kentucky was swept into the financial craze. In 1818 the Legislature chartered 46 banks with a total capital of \$8,720,000. In less than two years most of them had collapsed, and ruin confronted large numbers of the people. The Legislature was appealed to for relief, and a measure for that purpose was passed, but the Supreme Court held it null and void. Not to be outdone, the relief party carried the Legislature, the judges were legislated out of office, and a new court created and filled with judges favorable to the relief measure. The old court refused to give way, and for a time there were two Supreme Courts, their supporters throughout the State being known as the Old Court and New Court parties. The Old Court party finally triumphed. In the Mexican War, as in the War of 1812, Kentucky took an honorable part. Although her quota was but 2400, more than 10,000 volunteered, and Kentucky troops participated in most of the battles fought on Mexican soil. In 1850 a new constitution was adopted which made all judges and county officers elective.

Upon the outbreak of the Civil War Kentucky attempted to maintain a position of neutrality, but the geographical position of the State rendered the scheme impossible. The Governor rejected President Lincoln's call for troops, and when the Confederate and Union armies began to pour into the State from opposite directions formal demands were made for their withdrawal. The Union armies soon took possession, and by 1862 the Confederate forces had evacuated the State. The more important military operations in Kentucky were the battles of Mill Spring, Richmond, and Perryville, the invasion of General Bragg, the five successive cavalry raids of the Confederate General Morgan, and Forrest's attack on Paducah. Including the so-called Home Guards and those who enlisted but were never mustered in, Kentucky furnished more than 90,000 troops to the Union army and 40,000 to the Confederacy. A considerable portion of the population adhered to the Confederacy, and in November, 1862, a convention irregularly chosen and claiming to represent 65 counties of the State passed an ordinance of secession, and the Confederate Congress went through the form

of admitting the State to the Confederacy. Kentucky escaped from the carpetbag and military régimes, the civil authority having been reestablished in October, 1865.

Political conditions have given rise to a number of bitter feuds. One of these resulted in 1900 in the assassination of William Goebel, Democratic contestant for Governor. Mr. Goebel was nominated in June, 1899; but a faction of the Democratic party, angered by his alleged unscrupulous political methods, nominated an independent candidate, who received so many votes that W. S. Taylor, the Republican candidate, was declared elected. Previous to this, however, a clause in the election law had been inserted, through the efforts of Mr. Goebel, providing that the Legislature could, for cause, set aside the decision of the election commissioners. A committee of the Legislature was prepared to submit to that body a report unseating Governor Taylor in Mr. Goebel's favor, when on January 30 the latter was shot from a window in the State House. He took the oath as Governor on his deathbed, and upon his death J. C. W. Beckham, then Lieutenant Governor on the Democratic ticket, was sworn in as Governor. Warrants were issued for the arrest of Caleb Powers, Republican Secretary of State, and others identified with the Republican party. Mr. Taylor, who was also accused of complicity in the murder, left the State and remained in exile until the election of Governor Willson, noted below. On August 18 Mr. Powers was convicted as being an accessory to the murder and was sentenced to life imprisonment. An appeal was taken to the Court of Appeals, which granted him a new trial. On Sept. 1, 1901, he was reindicted and was tried again in October and was again found guilty. This verdict was for the second time set aside on appeal, as was a third. On Nov. 12, 1907, Powers having spent the intervening time in prison, a fourth trial resulted in a disagreement. On May 3, 1908, Powers was pardoned by Governor Willson. He was afterward a candidate for the national House of Representatives, was elected to Congress in 1911, and reelected in 1913.

Serious conditions in the tobacco fields of the State, beginning about 1906, resulted in what came to be almost a state of civil war. A number of tobacco producers, dissatisfied with the prices of tobacco obtained from the American Tobacco Company, organized what was known as the American Society of Equity, with the ostensible purpose of controlling the price of tobacco. A number of growers, however, refused to join this association, and there were organized against them a series of attacks by so-called "night riders." On Dec. 5, 1907, 500 of these night riders, masked and heavily armed, destroyed property in the city of Hopkinsville valued at \$200,000. Raids on other towns followed. State troops were called out by Governor Willson, and he also endeavored to bring about a peaceful solution of the troubles by conferences between the tobacco growers, societies, and tobacco buyers. The situation was complicated as a result of protests from the Italian government to the Secretary of State on account of the destruction of the property of Italian citizens, valued at about \$15,000, during the raid on Hopkinsville. Governor Willson's efforts did not succeed, and conditions grew worse in 1908. On January 3 the Governor issued a proclamation in which he offered a

reward of \$500 for the conviction of any person implicated in the raid of the night riders in the dark-tobacco belt. Nevertheless raids of the night riders continued. Tobacco warehouses were burned; many tobacco buyers and others were assaulted, and the property of many persons not involved in the feud was destroyed. Martial law was declared in several counties, and State troops were sent to preserve order. The reign of lawlessness continued during the summer and early months of autumn, 1908. On October 12, as a result of the murder of a tobacco farmer in Hickman County, together with his wife and two children, Governor Willson made a final appeal to the people to put an end to the outrages. In November of that year an arrangement was made between the American Society of Equity and the American Tobacco Company, whereby the latter was to buy tobacco at the rates insisted on by the associated growers. Night riding, however, continued in 1909, although to a less serious extent. Several suits for damages were won by independent tobacco manufacturers against the Burley Tobacco Society, an organization formed to control the price of tobacco in the Burley District. The Legislature of 1910 passed a measure making it lawful for farmers to abstain from growing any kind of crop for any given period or season, and to combine or pool crops of certain commodities in order to obtain a higher price therefor. This legislation, together with an agreement by the American Tobacco Company to purchase tobacco at a fixed price, resulted in the cessation of night riding and the restoration of normal conditions.

The election of State officers held on Nov. 5, 1907, resulted in the success of Augustus E. Willson, the Republican candidate, who received 214,481 votes, compared with 196,428 votes for his Democratic opponent. Mr. Willson was the first Republican Governor elected and seated since 1895. The most notable event in the political history of the State in 1908 was the election of a Republican Senator to succeed James B. McCreary for the term beginning March 4, 1909. After a deadlock that lasted two months William O. Bradley, former Governor, was elected. In the election of Nov. 3, 1908, Bryan received 244,092 votes, Taft 234,711, Debs 4060. The election held on Nov. 7, 1911, resulted in an overwhelming victory for the Democratic nominees. The State, which for four years had had a Republican Governor, gave Mr. McCreary, the Democratic nominee, a plurality of 31,335 votes. The Democrats also obtained a strong majority in the Legislature. The Legislature elected Ollie M. James United States Senator on Jan. 10, 1912. In the national election held on November 5 Wilson received 219,584 votes, Taft 115,512, Roosevelt 102,766, Debs 11,647. On March 13, 1914, the House of Representatives defeated a resolution to submit to the people an amendment to the constitution allowing women to vote. The Senate on March 17, 1914, rejected a State-wide prohibition bill passed several days previous by the House. Senator Bradley died on May 23, 1914, and Johnson N. Camden was appointed to fill the vacancy caused by his death. The following November ex-Governor Beckham was elected to succeed Senator Camden. The State has 11 representatives in Congress and 13 electoral votes.

In national elections Kentucky was a Democratic State from the date of its admission till

the formation of parties about 1828. It voted for Clay in 1824 and for Jackson in 1828, but from this time till 1852 it was one of the strongest Whig States. It cast its vote for Buchanan in 1856 and for Bell in 1860. Since that time it has been Democratic, with the exception of the year 1896, when it cast 12 of its electoral votes for Mr. McKinley and one for Mr. Bryan. The Governors of the State with their party affiliations have been as follows:

Isaac Shelby	Democrat-Republican	1792-96
James Garrard	" "	1796-1804
Christopher Greenup	" "	1804-08
Charles Scott	" "	1808-12
Isaac Shelby	" "	1812-16
George Madison	" "	1816
Gabriel Slaughter	" "	1816-20
John Adair	" "	1820-24
Joseph Desha	" "	1824-28
Thomas Metcalf	Clay Democrat	1828-32
John Breathitt	Jackson Democrat	1832-34
James T. Morehead	" "	1834-36
James Clark	Whig	1836-39
Charles A. Wickliffe	" "	1839-40
Robert Letcher	" "	1840-44
William Owsley	" "	1844-48
John Crittenden	" "	1848-50
John Helm	Democrat	1850-51
Lazarus Powell	" "	1851-55
Charles Morehead	Whig	1855-59
Beriah Magoffin	Democrat	1859-62
James Robinson	" "	1862-63
Thomas E. Bramlette	" "	1863-67
John Helm	" "	1867
John Stevenson	" "	1867-71
Preston Leslie	" "	1871-75
James B. McCreary	" "	1875-79
Luke Blackburn	" "	1879-83
Proctor Knott	" "	1883-87
Simon B. Buckner	" "	1887-91
John Y. Brown	" "	1891-95
William O. Bradley	Republican	1895-99
William S. Taylor*	" "	Jan 2-31, 1900
William Goebel†	Democrat	Jan. 31-Feb 3, 1900
J. C. W. Beckham	" "	1900-07
Augustus E. Willson	Republican	1907-11
James B. McCreary	Democrat	1911-

* Election by Goebel, who received the certificate of election.

† Died in office.

Bibliography. Gilbert Imlay, *A Topographical Description of the Western Territory of North America* (2 vols., New York, 1793); Humphrey Marshall, *The History of Kentucky* (2 vols., Frankfort, 1824); Mann Butler, *The History of the Commonwealth of Kentucky* (Louisville, 1834); Arthur and Carpenter, *History of Kentucky* (ib., 1881); N. S. Shaler, *Kentucky: A Pioneer Commonwealth* (Boston, 1885); Thomas Speed, *The Wilderness Road: A Description of the Routes of Travel by which the Pioneers and Early Settlers First Came to Kentucky* (Louisville, 1886); J. M. Brown, *The Political Beginnings of Kentucky* (ib., 1889); R. T. Durrett, *The Centenary of Kentucky* (ib., 1892); S. W. Price, *The Old Masters of the Bluegrass* (ib., 1902); W. H. Haney, *Mountain People of Kentucky* (Cincinnati, 1906); J. W. Townsend, *Kentuckians in History and Literature* (Washington, 1907); John Filson, *First Map of Kentucky* (Boston, 1908); E. S. Kinkead, *History of Kentucky* (New York, 1909); R. M. McElroy, *Kentucky in the Nation's History* (ib., 1909); B. H. Young, *Prehistoric Men of Kentucky* (Louisville, 1910); A. R. Hasse (comp.), *Index of Economic Material in Documents of the States of the United States: Kentucky, 1792-1904* (Washington, 1910); Mary Verhoeff, *Kentucky Mountains: Transportation and Commerce, 1750-1911* (Louisville, 1911); E. P. Johnson, *History of Kentucky and Kentuckians* (New York, 1912); R. S. Eubank, *Story of Kentucky* (Chicago, 1913); also publications of the Fil-

son Club (Louisville) and the annual reports of the State departments.

KENTUCKY. A river in the State of Kentucky. It is formed by several forks in the Cumberland Mountains on the southeastern boundary of the State and flows in a winding northwest course for 260 miles, emptying into the Ohio River midway between Cincinnati and Louisville (Map Kentucky, F 2). It flows through a region of romantic beauty, passing for a long distance between perpendicular rocks of limestone, through which it has worn its way. The region abounds in coal, iron, salt, and an excellent variety of marble. The navigation of the river has been improved by a system of locks and dams constructed at great cost, so that steamboats can ascend it 60 miles to Frankfort and flatboats 100 miles farther.

KENTUCKY, THE STATE UNIVERSITY OF A coeducational institution for higher education at Lexington, Ky. It was established in 1865 as a part of the University of Kentucky now known as Transylvania University, under denominational control. It remained a part of that institution until 1880, when it was reorganized under the control of the State, with the name of the State University of Kentucky. The university has a campus of 52 acres, which was given by the city of Lexington. It has college buildings and equipment valued at \$750,000. Its departments include the College of Arts and Sciences, College of Agriculture, College of Civil Engineering, College of Mechanical and Electrical Engineering, College of Mines and Metallurgy, College of Law, and Graduate School. There is also connected with the university an agricultural experiment station with a farm of 250 acres and farm equipment valued at \$175,000. The total income of the university in 1913-14 was about \$200,000. Of this \$140,000 were from State appropriations and the remainder from national appropriations. The attendance in all departments of the university in 1913-14 was 1245, and the faculty included 75 professors and instructors. The library contained about 30,000 volumes. The president in 1914 was Henry Stiles Barker, LL.D.

KENTUCKY COFFEE TREE. A North American tree. See GYMNOCLADUS.

KENTUCKY RESOLUTIONS. See VIRGINIA AND KENTUCKY RESOLUTIONS.

KENTUCKY STATE AGRICULTURAL AND MECHANICAL COLLEGE. See KENTUCKY, THE STATE UNIVERSITY OF.

KENTUCKY UNIVERSITY. See TRANSYLVANIA UNIVERSITY.

KENTUCKY WARBLER. One of the most beautiful of the American wood warblers (*Geothlypis formosa* or *Oporornis formosus*); migratory and numerous in summer in the eastern parts of the United States. It is clear olive green, bright yellow below, head and neck of male black, with a yellow stripe above and behind the eye. In the female the black is replaced by dusky olive. Its terrestrial habits lead it to haunt thickets near streams for the most part. Consult F. M. Chapman, *The Warblers of North America* (New York, 1907). See WARBLER, and Colored Plate of AMERICAN WOOD WARBLERS.

KENTVILLE. The capital of King's Co., Nova Scotia, Canada, on the Cornwallis River, 71 miles by rail northwest of Halifax (Map:

Nova Scotia, E 3). It contains an academy and a provincial sanitarium, and near it are a militia camp and a Dominion experimental farm. Its manufactures include woodwork, milling machinery, gasoline engines, carriages, and automobiles. The town owns its lighting plant and water works. Pop, 1901, 1731; 1911, 2304.

KENYON, kén'yón, FREDERICK GEORGE (1863-). A distinguished English classical scholar and paleographer, born in London. He graduated at New College, Oxford, and was made fellow of Magdalen College (1888) and assistant keeper of manuscripts in the British Museum (1889). He did valuable service in the cause of classical studies by his publications of texts discovered in papyri belonging to the British Museum. The most important of these are: Aristotle's *Constitution of Athens* (1891); Herondas (1891), Hyperides (1891-92); Bacchylides (1897); *Catalogue of Greek Papyri in the British Museum* (3 vols, 1893, 1898, 1907). He has also published: *Paleography of Greek Papyri* (1899), *Facsimiles of Biblical Manuscripts in the British Museum* (London, 1900); *Handbook to the Textual Criticism of the New Testament* (1901, 2d ed., 1912); *Evidence of Greek Papyri with regard to Textual Criticism* (1905); *Robert Browning and Alfred Domett* (1906); a reproduction of part of the *Codex Alexandrinus* of the Greek Bible (1909), and other works on biblical manuscripts. He also edited the poems and letters of the Brownings.

KENYON, JOHN (1784-1856). A British poet and philanthropist. He was born on the island of Jamaica, West Indies, was left an orphan while a schoolboy in Bristol, England; and was educated at the Charterhouse, London, and at Peterhouse College, Cambridge. He became the associate and friend of Coleridge, Wordsworth, Southey, Charles Lamb, the Brownings, and numerous other celebrities, including Bayard Taylor and James T. Fields, and, possessed of great wealth, was the helpful and unostentatious benefactor of many of the more needy of his literary friends. His poetical works include: *A Rhymed Plea for Tolerance* (1833), *Poems for the Most Part Occasional* (1838); *A Day at Twol, with Other Verses* (1849). He was twice married, and his second wife is the Nea of some of his most graceful verses. He was widely known for his hospitality, his generosity, and his charities. Eighty legatees were mentioned in his will, which included various benevolent institutions and many of his friends.

KENYON, WILLIAM SQUIRE (1869-). An American legislator. He was born at Elyria, Ohio, and was educated at Iowa (now Grinnell) College and at the law school of the State University of Iowa. He took up the practice of law at Fort Dodge, Iowa; was prosecuting attorney of Webster Co., Iowa, for five years and district judge of the eleventh judicial district of Iowa for two years; and served as district attorney (1904-07) and general attorney (1907-10) of the Illinois Central Railroad and as assistant to the Attorney-General of the United States (1910-11). In 1911 he was elected United States Senator for an unexpired term and was reelected for the term 1913-19. Senator Kenyon attracted national attention by his advocacy in the United States Senate of progressive legislation regarding child labor, lobbying, and government ownership of railroads. His support of the miners during the labor troubles in West Virginia, Michigan, and

Colorado (1913-14) and his bill in 1914 to repeal the act incorporating Rockefeller's General Education Board gave him popularity among some classes.

KENYON COLLEGE. A college in Gambier, Ohio, established by, and historically connected with, the Protestant Episcopal church. Three schools—a Theological Seminary, a College, and a Preparatory School—were originally established, but in 1906 the Preparatory School was discontinued. The corporate name was changed in 1891 to Kenyon College, and in 1912 constitutional changes made the board of trustees an autonomous and independent body. In 1913-14 Kenyon College had a faculty of 24 and a student enrollment of 117 in the College and 19 in the Theological Seminary. The library contains over 40,000 volumes. Of its original domain of 4000 acres, the college still retains over 400. The college buildings are constructed of stone in collegiate Gothic style and with the grounds are valued at \$544,000. The endowment is \$520,000, and the gross income is \$65,500. The college is not coeducational, only men being admitted. Courses leading to the three degrees of A.B., Ph.B., and B.S. are offered by the college, while in the seminary a three years' course leads to the degree of B.D. Kenyon has had many distinguished graduates, among them Rutherford B. Hayes, Edwin M. Stanton, David Davis, Henry Winter Davis, Stanley Matthews, and John J. McCook. The president in 1914 was Rev. W. F. Peirce, D.D., L.H.D.

KEOKUK. A city and one of the two county seats of Lee Co., Iowa, 166 miles by rail southeast of Des Moines, the State capital, at the confluence of the Des Moines and Mississippi rivers and on the Chicago, Rock Island, and Pacific, the Chicago, Burlington, and Quincy, the Toledo, Peoria, and Western, and the Wabash railroads (Map: Iowa, F 4). Until about 1910 there had been around the Des Moines rapids of the Mississippi a canal 8 miles long, costing almost \$8,000,000, which had, since 1877, made possible continuous navigation between New Orleans and St. Paul. This has been obliterated by the construction of one of the largest hydroelectric power plants in the world, largely completed and put into operation in June, 1913. See DAMS AND RESERVOIRS.

With its transportation facilities, both by rail and by water, Keokuk has developed into an important wholesale and jobbing place and, as the centre of a fertile agricultural region, controls an extensive trade in farm products. The industrial establishments include lumber mills, powder works, canning and pickling establishments, a poultry-packing plant, garment, boot and shoe, and starch factories, cereal mills, box factory, drug manufacturing laboratory, and cement-machinery factory. Keokuk, locally known as the Gate City and the Power City, extends along the river on the summit of high bluffs. It has many wide, well-paved streets and boulevards.

Among its noteworthy features are Rand Park, the burial place of the Indian chief after whom the city was named, the national cemetery, United States Weather Bureau Station, and a public library of 30,000 volumes. It was formerly the seat of a large college of physicians, established in 1849, and a dental college and school of pharmacy, established a few years later. Prominent structures are the United States government building, the Mississippi

River Power Company's dam and power house, high school, Union Railway Station, Elks Club, Masonic Temple, courthouse, a fine hotel, and an opera house. The railroad and wagon bridge across the Mississippi River here is more than 2000 feet long. In December, 1913, a complete plan for the city was adopted.

Keokuk was first incorporated in 1848 and adopted the commission form of government in 1910. There are two commissioners besides the mayor. Pop., 1890, 14,101; 1900, 14,641; 1910, 14,008. Consult: "Early Days in Keokuk," in *Annals of Iowa*, vol. iii (Iowa City, 1871); V. Ivins, *Pen Pictures of Early Western Days* (Keokuk, 1905), *Commission Plan of Municipal Government as Used by the City of Keokuk* (ib., 1907); *Annual Reports under the Commission Plan of Government* (ib., 1910-). See DAMS AND RESERVOIRS.

KEOKUK (WATCHFUL FOX) (c.1780-1848). An Indian chief of the Sac-Fox Confederation, from whom the city of Keokuk, Iowa, was named. He was born near Rock River, Ill., in a tribe of Sacs, whose spokesman he was during the War of 1812. In 1832 his efforts kept the tribe from uniting with Black Hawk (q.v.) in taking up arms against the United States. He was one of the party who in 1837 went to Washington and arranged a peace between his people and the Sioux. Visits were made to other eastern cities, where Keokuk's eloquence was much remarked. In 1845 he removed from Iowa to Kansas, where he died, poisoned by a member of the Black Hawk band.

KEPHALLENIA. See CEPHALONIA.

KEPHIR. See KEFIR.

KEPI, kâ'pê; often as *Eng. kâ'pî* (Fr.). The ordinary forage cap of the French infantry soldier. It was originally made of red cloth, with a patent-leather visor, and was first used by the French troops serving in Algeria.

KEPLER, JOHANN (1571-1630). One of the world's greatest astronomers. He was born on Dec. 27, 1571, at Weil der Stadt in Württemberg, Germany. He was sickly in his early childhood, and his constitution remained weak throughout life. In 1584 he was sent to the cloister school in Adelberg and in 1586 to the academy in Maulbronn. On passing a brilliant maturity examination, he was admitted in 1589 to the University of Tübingen. Here he studied chiefly theology and the classics. At the same time he became acquainted with the teachings of Copernicus, which greatly influenced his later career. In 1594 he accepted the chair of astronomy and mathematics at Graz, which he held until 1600, when he was compelled to leave on account of religious difficulties. Tycho Brahe had been appointed mathematician and astronomer to Emperor Rudolph II in 1599, and in the following year Kepler became his assistant in the observatory near Prague. On Oct. 13, 1601, Tycho Brahe died, and Kepler succeeded him in both of his important posts. His compensation was to be 500 florins a year, but, owing to the desperate condition of the Imperial finances, it was never paid in full. While retaining this position, Kepler in 1612 accepted the office of mathematician to the states of Upper Austria. In 1626 he moved to Ulm, where he undertook the publication of the Rudolphine Tables. In July, 1628, he left the service of the Emperor Ferdinand II and entered that of Wallenstein, who promised to pay the amount of his former salary that still remained unpaid.

Wallenstein, however, did not keep his promise. With the intention of presenting his case to the Imperial Diet, Kepler undertook a journey to Ratisbon. But on his way he was attacked by fever and shortly after reaching Ratisbon died, on Nov. 15, 1630. While in Graz, in 1597 he married Barbara von Mühleck, who died in 1611. Two years later he married Susanna Reutlinger, who survived him.

Kepler early conceived that there must be some intelligible reason for the actual disposition of the solar system, and it was mainly the development of this idea that gained him a wide reputation and the friendship of Tycho Brahe and Galileo. In the capacity of Imperial mathematician he completed the Rudolphine Tables, which had been left unfinished by the death of his former patron, Tycho Brahe. But he was also compelled to discharge the duties of an astrologer, although he limited his astrological work to the vague estimation of tendencies and probabilities. His chief title to fame is his discovery of the three laws of planetary motion, viz., the laws of elliptical orbits, of equal areas, and of the relations between periods and distances. (See ASTRONOMY; GRAVITATION.) The first two of these laws appeared in his greatest work, *Astronomia Nova de Motibus Stellæ Martis ex Observationibus Tychoonis Brahe* (1609). Other important features of this work were discoveries in regard to gravitation and the explanation of the tides by lunar attraction. In 1616, in Linz, Kepler calculated the first ephemerides based on his laws. In 1619, in his treatise *Harmonices Mundi, Libri V*, he published his third law. In September, 1627, he finished the Rudolphine Tables, the appendix of which contained a catalogue of 1005 stars. In 1629 he called the attention of astronomers to the approaching transits of Mercury and Venus. That of Mercury, which occurred on Nov. 7, 1631, was the first transit of a planet across the sun ever observed.

Kepler was also the founder of a theory of vortices and did pioneer work in several important scientific subjects. In 1604 he announced an approximation to the law of refraction, and on the invention of the telescope he gave the theory of refraction by lenses and the principle of the inverting telescope. His theory of infinitesimals prepared the way for Cavalieri's theory of indivisibles and the invention of the calculus by Newton and Leibnitz. He was also very active in introducing logarithms into Germany. His principal writings, besides those already mentioned, include: *Prodromus Dissertationum Cosmographicarum seu Mysterium Cosmographicum* (1596); *Ad Vitellionem Paralipomena quibus Astronomiæ Pars Optica Traditur* (1604); *De Stella Nova in pede Serpentarii* (1606); *Nova Stereometria Solidorum* (1613); *Ephemerides Nova Motuum Cælestium* (1616); *Eptomes Astronomiæ Copernicana* (1618-21); *De Cometis* (1619); *Chilias Logarithmorum* (1624); *Somnium seu Opus Posthumum de Astronomia Sublunari* (1634). His extant manuscripts were purchased by Empress Catharine II of Russia, donated by her to the Academy of St. Petersburg and deposited in the observatory of Pulkowa, where they remained inaccessible for a long time. A complete edition of Kepler's works, in eight volumes, was prepared by Frisch under the title *Joannis Kepleri Opera Omnia* (1858-71).

Bibliography. Breitschwert, *Joann Kepler*. Vol. XIII.—13

ler's Leben und Wirken (Stuttgart, 1881); Apeit, *Joann Kepler's astronomische Weltansicht* (Leipzig, 1849); Förster, *Joann Kepler und die Harmonie der Sphären* (Berlin, 1862); Bertrand, *Les fondateurs de l'astronomie moderne* (Paris, 1865); Reithinger, Neumann, and Gruner, *Joann Kepler* (Stuttgart, 1868); Müller, *Die Keplerschen Gesetze* (Brunswick, 1871); Reuschle, *Kepler und die Astronomie* (Frankfort, 1871); Göbel, *Ueber Keplers astronomische Anschauung und Forschungen* (Halle, 1872); Hasner, *Tycho Brahe und Kepler in Prag* (Prague, 1872); Brewster, *The Martyrs of Science*; Galileo, *Tycho Brahe, and Kepler* (8th ed., London, 1874); Wolf, *Geschichte der Astronomie* (Munich, 1877); Müller, *Johannes Kepler, der Gesetzgeber der neuen Astronomie* (Freiburg, 1903); Günther, *Kepler und die Theologie* (Gießen, 1905); Otto Closs, *Kepler und Newton und das Problem der Gravitation* (Heidelberg, 1908).

KEPLER'S LAWS. See CENTRAL FORCES.

KEPPEL, AUGUSTUS, VISCOUNT (1725-86). An English admiral, the son of William, second Earl of Albemarle, and grandson of Arnold Joost van Keppel, first Earl of Albemarle, a Dutch general in the suite of William of Orange when he came to England in 1688. He was educated at Westminster School and in 1735 joined the navy. After serving on the Guinea coast and in the Mediterranean, in 1740-44 he accompanied Anson on the latter's voyage around the world. In 1744 he was promoted to post captain and for several years made successful expeditions, notably in 1748, when he concluded a treaty with the Dey of Algiers, and in 1762, when Havana was taken after a siege of two months. He sat in Parliament for Windsor from 1761 to 1780 and later for Surrey. In 1762 he became rear admiral, in 1765-66 was a member of the Admiralty Board, and in 1778 was made an admiral. In the latter year he came into special prominence in connection with the indecisive engagement off Ushant, when, owing to the failure of Sir Hugh Palliser, who commanded the rear, to obey Keppel's signals, the French fleet under D'Orvilliers escaped into Brest. The facts becoming known, Palliser, who was in favor with Keppel's political opponents, demanded a court-martial, accusing Keppel of incompetency and cowardice. The trial resulted in a complete vindication and approval of Keppel's course of action, and he became the hero at numerous popular demonstrations. His services, however, were suspended by his opponents, but as an active member of Parliament he was a capable critic of their naval administration and in 1782, under a change of ministry, was appointed First Lord of the Admiralty and the same year was created Viscount Keppel and Baron Eldon. Consult Keppel, *Life of Admiral Keppel* (2 vols., London, 1842).

KEPPEL, SIR COLIN RICHARD (1862-). An English naval officer, son of Sir Henry Keppel. Entering the navy before he was 13, he served in the Egyptian War of 1882, in the Sudan in 1884-85, and with Egyptian forces on the Nile in 1885-86, commanding the gunboat flotilla in 1887-88 at Omdurman. He was promoted captain in 1899 and was in command of the Atlantic fleet as rear admiral in 1909-10. He was made Knight Commander of the Victorian Order in 1908 and of the Indian Empire in 1911.

KEPPEL, FREDERICK (1846-1912). An

American art dealer and connoisseur. He was born at Tullow, Ireland, and was educated at Wesley College, Dublin. Removing to New York, he established himself in 1868 as an art dealer and soon acquired a reputation as an authority on etchings and engravings. In 1886 he established branches of his firm in Paris and London. He was also known as a lecturer on his chosen subjects and as a writer and translator of works. His contributions appeared in the *Century*, *Harper's*, the *Studio*, and other magazines, and he published these books, among others: *The Etched Work of Jean François Millet*, a translation from the French; *Modern Disciples of Rembrandt* (1890); *Christmas in Art* (1909); *The Golden Age of Engraving* (1910).

KEPPEL, SIR HENRY (1809-1904). An English admiral and author, the fourth son of the fourth Earl of Albemarle. Born in Kensington, he joined the navy in 1822 and became lieutenant in 1829, commander in 1833, and post captain in 1837. After serving in India, in the Mediterranean, and at the Cape of Good Hope, from 1841 to 1845 and from 1847 to 1851 he was in command of the China and Pacific stations, doing valuable service in suppressing piracy. He commanded the naval brigade at Sebastopol during the Crimean War (1854-55) and from 1857 to 1858 was again on the China coast, when he destroyed the Chinese war fleet in Fatsan Creek. For this service he was created K.C.B. In 1860 he was naval commander in chief at the Cape of Good Hope, afterward on the Brazilian station, and from 1867 to 1869 vice admiral and commander in chief of the China-Japan squadron. In 1869 he became full admiral and returned to England. He was made G.C.B. in 1871 and admiral of the fleet in 1877. He was the author of *Expedition of H.M.S. Dodo to Borneo* (2 vols., 3d ed., 1847); *A Visit to the Indian Archipelago in H.M.S. Meander, with Journal of Sir James Brooke* (2 vols., 1853); *Reminiscences* (1898); *A Sailor's Life under Four Sovereigns* (3 vols., 1899). Consult Sir Algernon West, *Memoir of Sir Henry Keppel* (London, 1906).

KEPPLER, JOSEPH (1838-94). An American cartoonist, the founder of the New York comic weekly, *Puck*. He was born in Vienna, where he studied at the Academy of Fine Arts and contributed cartoons to leading periodicals. He was the first to introduce into the United States color lithography as a medium for caricature. In 1868 he established in St. Louis a German *Puck*, the failure of which caused him to move to New York. There he was employed as caricaturist for *Frank Leslie's Illustrated Newspaper* from 1872 to 1877. In 1875 he started another German *Puck*, in partnership with Adolph Schwartzman. The colored political cartoons of this paper became famous, and in 1877 the English edition appeared. Much of Keppler's success was due to his clever adaptation to modern life of mythological and historical subjects.

KER, kër, JOHN, third DUKE OF ROXBURGH. See ROXBURGH.

KER, JOHN (1819-86). A Scottish Presbyterian divine. He was born at Tweedsmuir in Peeblesshire and was educated at Edinburgh University and in Germany. Ordained to the ministry in 1845, he accepted the pastorate of the East Campbell Street Church in Glasgow in 1851. In 1876 he was appointed professor of

practical training in the United Presbyterian Theological Hall and occupied the position during the remainder of his life. His publications include a volume of *Sermons*, which went through several editions (1868-88); *The Psalms in History and Biography* (1886); *Scottish Nationality and Other Papers* (1887); *Lectures on the History of Preaching* (1888); *Letters, 1866-85* (1890). A volume of *Memorial Discourses* indicated his popularity.

KER'ATIN (from Gk. *képas*, *keras*, horn). A nitrogenous organic substance allied to the proteids and rich in sulphur. It is not acted on by either pepsin or trypsin. Keratin is the principal chemical constituent of the substance of hair, epidermis, nails, feathers, and horn. It may be readily prepared from the shell membrane of eggs, which is for this purpose extracted with water, alcohol, ether, and dilute acids, then digested with pepsin and trypsin, and again washed in the solvents. Keratin is soluble in hot concentrated alkalies. Strong nitric acid imparts to it a yellow color, which explains the staining of the skin by nitric acid. By consecutive treatment with moderately dilute hydrochloric acid, sodium hydroxide, and potassium permanganate, and the application of pressure, keratin (and therefore also horn scraps, hair, and similar substances) is converted into a material usable in the arts. On the other hand, dilute mineral acids, under certain conditions, transform keratin into digestible albumoses and peptones. When hydrolyzed by prolonged boiling with aqueous acids, keratin yields a variety of amino acids. See POLYPEPTIDES.

KER'ATITIS. See CORNEA.

KÉRATRY, kà'rà'tré', AUGUSTE HILARION DE (1769-1859). A French author and politician. He was born at Rennes and, though republican in principles, was imprisoned twice during the Terror on account of his aristocratic descent. He then lived in retirement and devoted himself to philosophical and religious studies until the restoration of the Bourbons. By his liberal attitude as a member of the Chamber of Deputies he did much to promote the Revolution of 1830, resulting in the downfall of Charles X and the accession of Louis Philippe. He was made a peer of France in 1837 by Louis Philippe. In 1848 he was again a member of the Chamber of Deputies. After the coup d'état of Napoleon, to whom he was strongly opposed, he withdrew from public life. Among his works may be mentioned: *Inductions morales et physiologiques* (1817); *Du beau dans les arts d'imitation* (1822); and some novels, widely read in their time, including *Le dernier des Beaumanoirs* (1824), *Frédéric Styndall* (1827), and *Saphira* (1835). He also contributed numerous articles to the *Courrier Français*, of which he was one of the founders.

KÉRATRY, EMILE DE, COUNT (1832-1904). A French politician, born in Paris. Abandoning the legitimist traditions of his family, young Kératry entered the army (1854) and fought in Africa, the Crimea, and Mexico. Returning to Paris in 1865, he became a contributor to the *Revue Contemporaine* and subsequently editor of the *Revue Moderne*, in which appeared his articles on the French occupation and campaigns in Mexico, which threw light on the course pursued by the Imperial government in Mexico and produced a lively sensation in France. In 1869

he was elected a deputy to the Corps Législatif and became an active member of the opposition. During the session of 1870 Kératry was active in pressing measures for the reform of the national militia and the suffrage. On the fall of the Empire (Sept. 4, 1870) he was made Prefect of Paris, but he soon resigned this position to go on a diplomatic mission to Spain. On his return Gambetta made him commander in chief of the forces organized in the five departments of Brittany, but he quarreled with Gambetta and resigned Nov. 27, 1870. In March, 1871, Thiers appointed him Prefect of the Department of Haute-Garonne, and in November he was made Prefect of the Department of Bouches-du-Rhône, but he exhibited such lack of tact and hostility to the Republican party that his resignation was willingly accepted in August, 1872. He then became one of the editors of *Le Soir*. He wrote several comedies, dramas, and pamphlets. Among his comedies and dramas may be mentioned *La vie de club* and *La guerre des blasons*. His historical works and political pamphlets are strongly partisan and must be read with caution. The chief among them are *La Contre-Guerrilla française au Mexique* (1867), *L'Élévation et la chute de l'empereur Maximilien* (1867); *La créance Jecker* (1868), *Le quatre Septembre* (1872), *Murad V, prince, sultan, prisonnier d'état* (1878), *A travers le passé, souvenirs militaires* (1887).

KERAULI, kē-rōu'lē, or **KARAULI**, kā-rōu'lē. A native Rajput state, India, northwest of Gwalior, from which it is separated by the Chumbul River (Map: India, C 3). Area, 1242 square miles. Pop., 1901, 156,786. 1911, 146,587. The surface generally is hilly and well timbered; iron is found, building stone is quarried, and there are some unimportant domestic industries. About one-fourth of the soil is cultivated with rice, barley, grain, and wheat for home consumption. Gunny cloth is made and exported. The ruler is a rajah, advised by a British Resident. Capital, Keraul.

KARBELA, kār'bē-lā, or **MESHHEH HOSEIN**, mēsh'hēd hō-sān'. A city of Asiatic Turkey in the Vilayet of Bagdad, about 55 miles southwest of the city of Bagdad, not far from the Euphrates, with which it is connected by the ancient Hamadiyyah Grand Canal, which drains a marshy region (Map: Turkey in Asia, E 4). Hosein, son of the Caliph Ali, while attempting to defend his claim to the caliphate, was defeated and killed there by the Ommyads (Oct 10, 680); he was buried in the city, which then became for the Shi'ahs second in holiness only to Mecca. Most of this sect being Persians, Kerbela is almost entirely Persian in character. The fanaticism of the inhabitants shows itself especially in the violence with which a sort of passion play is acted on the anniversary of Hosein's death (See **HASAN AND HUSAIN**.) The city has been the scene of many revolts, after the last of which, in 1843, suppressed with much bloodshed, the right of sanctuary which had been extended to criminals at Kerbela was annulled. There are five mosques. The principal one, that containing the tomb of Hosein, is venerated both by Shi'ahs and Sunnis; its domes and minarets are plated with gold. The second mosque is that of the Imam Abbas. Non-Mohammedans are not allowed to enter either of them. The number of pilgrims visiting the city annually is enormous—according to some estimates 200,000. They often bring the corpses

of relatives for burial in sacred ground. It is claimed that the plague which has often devastated the land was in many cases due to this fact. Kerbela is also a starting point for the Meccan pilgrimage (see **HADJ**), and the market place for the whole of northeast Arabia. Trade is brisk, and the Turkish government derives a large revenue from the place. The treasures of the mosques have during the centuries been enriched by countless precious gifts; the treasurers, who receive no salary, are also made wealthy by donations from pilgrims. The chief industries are the manufacture of bricks of holy earth, such as are used by the Shi'ahs in daily prayers, and the making of shrouds, on which are stamped verses from the Koran. Dates and cereals are the chief food exports. A ruined wall, 24 feet high, surrounds the old city, the streets of which, with one exception, are narrow and dirty. But new quarters have recently developed around the old, with broad, regular, and lamp-lighted streets, and sidewalks. The population is about 65,000, of which 54,000 are Shi'ahs.

KERENS, kēr'enz, **RICHARD C.** (1842–1916). An American contractor and politician. He was born in Killberry, County Meath, Ireland, but, brought to the United States in infancy, was educated in the public schools of Jackson Co., Iowa. Throughout the Civil War he served in the Union army. After the war he lived in Arkansas and at San Diego, Cal., and was contractor for the Overland Mail. In 1876 he moved to St. Louis and thereafter was interested in the construction of railroads and was active in the Republican politics of Missouri. In 1892 he became a member of the Republican National Committee. From 1909 to 1913 he was Ambassador to Austria-Hungary.

KERESAN STOCK. A Pueblo group of New Mexico, constituting the ancient tribe of the Queres or Keres, and now represented by the pueblos of Acoma, Cochiti, Laguna, San Felipe, Santa Ana, Santo Domingo, and Sia, all in the general neighborhood of Albuquerque, with an aggregate population of about 4000. The dialectic variation between the villages is slight, and the culture is similar. The Indians are skillful potters and weavers. Consult P. E. Goddard, *Indians of the Southwest* (New York, 1913). See **PUEBLO**, and **Colored Plate of INDIANS, AMERICAN**.

KERGUELEN (kēr'gē-lēn or kār'gē-lān') **LAND**, or **DESOLATION ISLAND**. An island in the south of the Indian Ocean, in lat. 48° 39' to 49° 44' S. and long. 68° 42' to 70° 35' E. It is over 100 miles long and about 50 miles wide at the widest part, with a total area of over 1300 square miles (Map: World, O 28). It is surrounded by numerous inlets and reefs and has an elevated surface, the glacier-covered peaks of Mount Ross and Mount Richards reaching 6060 and nearly 4000 feet respectively. The coasts are indented by a number of inlets, the largest being Christmas Harbor and Royal Sound. The island is of volcanic origin and composed chiefly of basaltic rocks with an admixture of carboniferous strata. Streams and lakes abound, but trees are absent. The flora is arctic, the most interesting species being the indigenous *Pringlea antiscorbutica*, or Kerguelen cabbage, a cruciferous edible plant of large dimensions. The fauna is made up largely of aquatic animals and sea fowl. The climate is very raw, the mean temperature being about

45° F. in summer and 29° F. in winter. The warmest period is in January. The group was discovered by Kerguelen-Trémarec in 1772 and visited by Cook in 1776. In 1874 the island was used by the German, English, and American expeditions as a station for observing the transit of Venus. Since 1893 the group has been in the possession of France. Under a concession from France the island has lately been occupied by a company engaged in whale fishery and in sheep farming. Consult J. H. Kidder, "Contributions to the Natural History of Kerguelen Island," in Smithsonian Institution, *Miscellaneous Collections*, vol. xiii (Washington, 1878); Hulot, "Les Kerguelen" in *Revue des Deux Mondes* (Paris, 1911); E. Rallier du Baty, "Quinze mois aux Iles Kerguelen," in Société de Géographie de Lille, *Bulletin*, vol. lvii (Lille, 1912). See POLAR RESEARCH.

KERGUELEN - TRÉMAREC, kar'ge-län'-trä'má'rék', YVES JOSEPH DE (1745-97). A French navigator and explorer, born at Quimper, Brittany. He sailed in 1771 on a voyage of discovery to the southern seas as naval lieutenant. At Mauritius he embarked in two smaller craft. In 1772 he discovered an island (see KERGUELEN LAND), which he supposed was the country full of natural riches he had hoped to find, and he claimed it for France. Kerguelen's discovery was discredited in his own country, as it was certainly not the long-sought southern continent. A second voyage (1773-74) with two vessels convinced the explorer of the island's barrenness, and in his bitter disappointment he named it Desolation Island. On his return he was tried by court-martial for professional errors, condemned and imprisoned; but Louis XVI released him and commanded him to write an account of his explorations. This he did in *Relation de deux voyages dans les mers australes et les Indes* (1782); and he published, besides, *Relation d'un voyage dans la mer du Nord* (1771) and *Relation des combats et des événements de la guerre maritime de 1778 entre la France et l'Angleterre* (1796).

KERKI, kër-ké'. A strongly fortified town, capital of a province of the same name, Bokhara, Central Asia, situated 113 miles southeast of the city of Bokhara, on the left bank of the Amu Darya (Map: Asia, Central, I 4). The town has several mosques, a small bazar, and a caravanserai. It is defended by a good wall and deep ditch and has some importance, owing to its position on the frontier and as a centre of caravan routes. Its fortifications were strengthened by the Russians in 1885, and the town contains a Russian garrison. The inhabitants, numbering about 5000, are mostly Uzbek and Turkomans.

KERKUK, kër-köök'. A town of Asiatic Turkey in the Vilayet of Mosul, situated on a tributary of the Tigris, about 140 miles north of Bagdad (Map: Turkey in Asia, E 3). It has an old citadel, a number of mosques, three Roman Catholic churches, and several monasteries. One of the mosques contains the alleged tomb of Daniel. There are some cotton factories, tanneries, and potteries; but its real importance is due to the petroleum and naphtha springs in the vicinity. It has a brisk trade in the produce of the neighborhood, silk, hides, fruit, and timber being exported. Near the city are mineral springs which enjoy a more than local repute. The population is estimated at 23,000, mostly Kurds, about one-third being Christian Chaldeans.

KERL, kër'l, GEORG HEINRICH BRUNO (1824-1905). A German metallurgist. He was born at Andreasberg in the Harz, received his scientific training at the mining academy of Clausthal and at Göttingen, and was appointed a lecturer in chemistry at Clausthal in 1846. In 1862 he obtained a professorship. In 1867 he was a lecturer in the Royal Mining Academy of Berlin, from 1868 to 1892 was a member of the expert industrial commission, and from 1877 to 1885 was connected with the patent office. He retired in 1897. In 1859 he became an assistant editor on the staff of the *Berg- und hüttenmännische Zeitung* of Leipzig. The list of his publications is extensive and includes a *Handbuch der metallurgischen Hüttenkunde* (2d ed., 4 vols., 1861-65), *Grundriss der allgemeinen Hüttenkunde* (2d ed., 1879), and *Metallhüttenkunde* (2d ed., 1881).

KERLÉREC, kar'lá'rék', LOUIS BILLOUART. CHEVALIER DE (1704-70). A French sailor and Colonial Governor of Louisiana. He was born at Quimper, France, and early entered the French navy. He served in the Austrian Succession he fought against the English. In 1751 he was on the *Neptune*, after his superior officers had been disabled, he fought three English ships, giving up only when the ship was full of water, the crew much reduced, and he himself wounded. He was promoted captain in 1751 and the next year was appointed Governor of Louisiana. He was involved in frequent quarrels with independently appointed subordinates and was much annoyed by English privateers and, in the upper Mississippi valley, by the intriguing of English agents with the Indians. Louis XV, finding the colony unprofitable, paid no attention to his appeals for aid and secretly ceded it to Spain. On his return to France in 1764, nevertheless, he left the colony in much better condition than that in which he found it. However, he was accused by some of his subordinates of peculation and illegal use of power. In 1769 he was convicted and sentenced to banishment. He appealed, but died before further action could be taken.

KERMAN, kër'mán. A province of Persia. See KIRMAN.

KERMANS SHAH, kër'mán-shá'. A town of Persia. See KIRMAN SHAH.

KERMES, kër'méz (Ar., Pers. *qirmiz*, *qirmizi*, crimson, from Skt *kṛmīya*, produced by a worm, from *kṛmī*, worm + *jñā*, to be born), or SCARLET GRAIN. One of the most ancient dye-stuffs on record, known in the time of Moses as *tola* and to the Greeks as *coccus*. It was obtained from the dried bodies of female kermes insects (*Lecanum ilicis*, L.). Kermes has been largely supplanted by cochineal (q.v.), which has 10 to 12 times its coloring power, but is still used in some parts of the south of Europe and more extensively in India and Persia. The kermes insect is abundant in these regions, attaching itself to the leaves of the kermes oak (*Quercus coccifera*), a low, bushy shrub with evergreen, spinous leaves. In some parts of Spain the kermes oak grows in great profusion, as on the slopes of the Sierra Morena. The kermes insect attacks the young shoots of the shrub, the female affixing itself and remaining immovable till, after attaining its full size, about that of a pea, it deposits its eggs. Kermes is gathered towards the end of May, before the eggs are hatched. The insects are killed by exposure to the fumes of boiling vinegar and afterward dried

in the sun or in an oven. The coloring matter is kermesic acid, $C_{18}H_{12}O_8$. It has been employed from time immemorial to dye cloth a brownish dark red. It may still be seen in the red draperies of the figures in old Flemish tapestries. Tradition states that the curtains of the Hebrew tabernacle were dyed with kermes.

KERMES MINERAL (so called from the orange-red color), or SULPHURETED ANTIMONY. An amorphous, impure, reddish-white antimonious sulphide (Sb_2S_3), used in medicine. It is made by boiling 4 parts of potassium hydrate and 12 parts of water with 1 part of native antimony trisulphide out of contact with air for some time, then adding 50 parts of boiling water, filtering quickly, and decomposing the solution with dilute sulphuric acid. The kermes mineral thus obtained contains small quantities of antimonious oxide and is insoluble in water and in alcohol. On exposure to light, its color becomes somewhat lighter. It forms one of the ingredients of compound pills of antimony, its action being similar to that of tartar emetic (q.v.) It was once a famous remedy, especially in France and Italy, and was known as Carthusian powder, or *poudre des Chartres*.

KERMIS, kër'mis, or **KERMESSE**. A carnival which has long been popular in the Low Countries and in northern France. It was originally a celebration upon the dedication of a church or upon the feast day of the patron saint of a town. It varied widely in different localities, but almost always consisted of a costume procession, sports, dances, and feasts. In many respects it was similar to the May-day festivities in England. There are more or less elaborate celebrations of this kind annually at Brussels, on Trinity Sunday at Mons, where it is the "Lumeçon" procession in which Gilles de Chin slays a monster who has captured a princess (this being a form of the St. George and the Dragon story), and every seven years at Hasselt, where it is chiefly a Christian, though in part a pagan, festival. In the United States a kermis is an entertainment, generally for some charitable purpose, in which the Flemish festival is imitated. Consult D. C. de K. Boulver, *Belgian Life in Town and Country* (New York, 1904).

KERN, kër'n. A name applied formerly to Irish and Gaelic infantry soldiers.

KERN, kër'n, HENDRIK (1833-). A Dutch Orientalist. He was born on the island of Java and was educated in Leyden and Berlin. He taught Greek in the Athenæum at Maestricht (1858-62) and in 1865 became professor at Leyden. His writings include *Handleiding bij het onderwijs der Nederlandsche taal* (1879-83); *Çakuntala* (1862); *Die Glossen in der Lex Salica und die Sprache der salischen Franken* (1869); *Kavastuden* (1871); *Aryabhatiya. A Manual of Astronomy* (1874); *Over de jaartelling der zuidelyke Buddhisten* (1875); *Geschiedenis van het Buddhisme in Indie* (1881-83; Fr. trans. by Huet, 1903); an edition of the text of the *Brihat-Samhita* (1865) and an English translation (1869); *De Fidji-taal vergeleken mit hare verwanten in Indonesie en Polynesie* (1886); *The Jātaka Māla*, in "Harvard Oriental Series" (1892); *Manual of Indian Buddhism*, in "Grundriss der indo-arischen Philologie" (1896); *Saddharma Pundarika* (1912); and numerous contributions to *Bydragen tot de Taal, Land, en Volkenkunde van Nederlandsch Indie*, and other periodicals. A complete bibli-

ography of his writings to 1903 is given in the *Album Kern* (Leyden, 1903), prepared in honor of his seventieth birthday.

KERN, HERMANN (1823-91). A German educator of the Herbartian school. He was born at Jüterbog and was educated at Leipzig. Through the teaching of Drobisch and Hartenstein he became a follower of the philosopher Herbart. He taught successively at Halle, Coburg, Mülheim, and Berlin. He retired from school work only a short time before his death. From 1853 to 1856 he was editor of the *Pädagogische Blätter*. Besides his contributions to the *Zeitschrift für das Gymnasialwesen*, and articles in Palmer and Wildermuth, *Encyclopadie des Erziehungs- und Unterrichtswesens* (1876-87), his works include: *De Leebmitu Scentia Generali* (1847); *Ein Beitrag zur Rechtfertigung der herbartischen Metaphysik* (1849); *Die philosophische Propädeutik in Verbindung mit dem mathematischen und physikalischen Gymnasialunterricht* (1861), and the very important *Grundriss der Pädagogik* (5th ed., 1893).

KERN, JOHANN KONRAD (1808-88). A Swiss statesman. He was born at Berlingen in the Canton of Thurgau, studied theology at Basel, and, turning to law, attended the universities of Berlin, Heidelberg, and Paris. On his return to his native canton he became a member of the cantonal Legislature (1832), and later President of the Council of Public Instruction (1835) and of the Supreme Court (1837), displaying in these offices fine oratorical talent and great legal and administrative sagacity. In 1838, when the French government demanded the expulsion from the country of Prince Louis Napoleon, Kern stirred up the Swiss to defiance. In 1847 he was instrumental in overthrowing the Sonderbund (q.v.) and in 1848 took an active part in the drawing up of the federal constitution and was later elected president of the federal court. As President of the Council of Public Instruction, he afterward established the Polytechnic School of Zurich, one of the most admirable institutions of its kind in Europe. In 1857 he took part, as delegate of Switzerland, in the conference at Paris which settled the dispute with Prussia concerning Neuchâtel. From 1857 to 1883 he was Swiss Minister to France and negotiated many important treaties with that country. His recollections were published in 1887 in Bern, *Souvenirs politiques*. Consult H. Kesselring, *J. K. Kern, eine Lebensskizze* (Frauenfeld, 1888).

KERN, JOHN WORTH (1849-). An American statesman and lawyer, born at Alto, Howard Co., Ind. He received his education in the high school of Kokomo (Ind.), and at the law school of the University of Michigan, from which he graduated in 1869. He began his practice at Kokomo and served as city attorney from 1871 to 1884. Removing in 1885 to Indianapolis, he became reporter of the Indiana Supreme Court; in this capacity he edited 17 volumes of the court's reports. An ardent Democrat in politics, he served as a member of the State Senate from 1893 to 1897. During the early part of his career he had become known as an able lawyer, and his tact and courtesy and power as a public speaker made him popular. He was special assistant United States district attorney in 1893-94 and city solicitor of Indianapolis from 1897 to 1901. In national politics he was the friend and supporter of Bryan. Although unsuccessful in 1900 and

1904 as candidate for Governor of Indiana, his campaign speeches brought him a reputation as an exponent of Democratic principles. In 1905 he received the complimentary votes of his party for United States Senator, and in 1908 he was Democratic nominee for Vice President. In 1911, his party having gained control of the State Legislature, Kern was elected to the Senate over Beveridge, the Republican nominee. He took rank as one of the leading Democratic Senators. In the Democratic National Convention of 1912 he was a delegate from Indiana and represented the interests of Governor Marshall, although he supported Wilson during the final ballots. Kern was himself mentioned as a possible presidential candidate by Bryan. When the Democratic party obtained control of the Senate, in 1913, he was made floor leader, a position which he filled with marked ability.

KERNAHAN, kĕr'nā-hān, COULSON (1858-). An English novelist, born at Ilfracombe, Devonshire. He was associated with Locker-Lampson on a new edition of *Lyra Elegantiarum*, contributed to many periodicals, wrote humorous verse, and gained wide popularity for his fiction, some of which has been translated into French, German, Dutch, Hungarian, and Chinese. Among his books are: *A Dead Man's Diary* (1890); *A Book of Strange Sins* (1893); *The Child, the Wise Man, and the Devil* (1896); *Soundrels and Co.* (1899); *A World without a Child* (1905); and, between 1906 and 1914, *An Author in the Territorials* (with foreword by Lord Roberts), *The Red Peril*, *Bedtime Stories*, and *The Bow-Wow Book*.

KERNER, kĕr'nĕr, ANTON (1831-98). An Austrian botanist. He was born at Mautern in Lower Austria. In 1858 he became professor of botany at the Polytechnic Institute at Buda and in 1860 was elected to the same chair in the University of Innsbruck, a post which he resigned in 1878 to accept the directorship of the botanical garden of Vienna and the professorship of botany in the university there, where his labors continued until his death, in 1898. He established his reputation by publishing a report of his botanical exploration of Hungary, *Pflanzenleben der Donauländer* (Innsbruck, 1863), and *Vegetationsverhältnisse des mittlern und östlichen Ungarn und Siebenbürgen* (ib., 1875). In 1864 he published a book upon the culture of Alpine plants (*Die Kultur der Alpenpflanzen*); in 1867 finished the publication of the results of his studies with respect to the limits of vegetation of more than 1000 species of plants, and in 1874 sketched a model botanical garden, *Die botanischen Garten*. One of his most important works is *Das Pflanzenleben*, which first appeared in 1887. The first volume of a new edition of this work by A. Hansen appeared in 1913.

KERNER, JUSTINUS (1786-1862). A German poet of the so-called Swabian school. He is best known for his *Reiseshatten* (1811), poems and dramatic scenes characterized by a dreamy fancy and a peculiar fantastic humor, and for a morbid book on animal magnetism, *Die Seherin von Prevorst* (1829), which passed through several editions and aroused much fleeting interest in America. Of his poems the *Wanderlied* is a universal favorite. He began life as an apprentice in a cloth factory at his native Ludwigsburg and went in 1804 to study medicine at Tübingen, where he became a friend of Uhland and Schwab. After two years of travel

(1809-11) he practiced medicine at Wildbad (1811), Welzheim (1812), Gaildorf (1815), and Weinsberg (1819). Partial blindness compelled him to give up his profession in 1851. A monument was erected to him at Stuttgart in 1895. His complete poetical works were edited by Heichen (8 vols, 1903).

Bibliography. Kerner's autobiographical *Bilderbuch aus meiner Knabenzeit* (Brunswick, 1849; new ed., Frankfurt, 1897); Strauss, "Justinus Kerner," in *Kleine Schriften* (Berlin, 1866); Watts, *Life and Work of Kerner* (London, 1884); Reinhard, *Justinus Kerner und das Kernerhaus zu Weinsberg* (Tübingen, 1886); Niethammer, *Justinus Kerners Jugendhebe* (Stuttgart, 1887); Heinemann, *Justinus Kerner als Romantiker* (Tübingen, 1908).

KERN (kĕrn) **LAKE**. A lake in Kern Co., Cal., flowing at high water into Kern River (Map: California, F 7).

KERN RIVER INDIANS. A small band of Shoshonean stock, on the Kern River in California.

KER'OSENE (from Gk. κῆρος, kĕros, wax). The name of a mixture of certain fluid hydrocarbons used for illumination. It has been prepared from bituminous coal and shales, asphaltums, and wood, and from rosin, fish oil, and candle tar, but is now more economically obtained from petroleum. The density of the mixture called kerosene should be about 0.810 or 43° Baumé and should not yield inflammable vapors below a temperature of 110° or 120° F. It is, therefore, not explosive under ordinary circumstances, and a lighted match may be plunged into it without igniting it. If, however, it be burned in a metal lamp, and this be heated to 115° or 120° F, gases might be formed in the upper part of the lamp which, on taking off the cap or burner, might cause an explosion. The temperature at which these gases are given off is known as the flashing point. But there are many lighter hydrocarbons in petroleum, and much of the kerosene in the market contains them in greater or less proportion. The kerosene now used for illuminating purposes is obtained largely in the refining of petroleum (q.v.).

KERR, kĕr, MICHAEL CRAWFORD (1827-76). An American legislator. He was born at Titusville, Pa., was educated at Erie Academy and graduated at the law school of Louisville University in 1851. He removed to New Albany, Ind., in 1852, was a member of the State Legislature in 1856-57, and in 1862-65, as reporter to the Supreme Court of Indiana, compiled five volumes of valuable *Reports*. In 1864 he was elected to Congress as a "war" Democrat, having vigorously opposed the "Copperhead" element in his district. In Congress he was looked upon as one of the leaders of the Democratic party. He was reelected in 1866, 1868, and 1870, and he strongly opposed the Republican policy of reconstruction in the Southern States. His views on financial questions, however, did not meet with favor in his constituency, where he openly antagonized the inflationists and the "greenback" element and favored the resumption of specie payments. In 1874, however, after a sharp contest he was reelected, and on his reentry into Congress was elected to the speakership. He presided as Speaker at only the first session of the Forty-fourth Congress and died of consumption shortly after its adjournment.

KERR, ORPHEUS C. The pseudonym of Robert Henry Newell (q.v.).

KERR, WASHINGTON CARUTHERS (1827-85). An American geologist, born in Guilford Co., N. C. He graduated at the University of North Carolina in 1850 and was appointed a computer in the office of the *Nautical Almanac* at Cambridge, Mass. In 1855 he was appointed professor of geology, mineralogy, and chemistry in Davidson College (North Carolina), and at the beginning of the Civil War enlisted in the Confederate army as a private. He became State geologist of North Carolina in 1866 and from 1882 to 1883 was a member of the United States Geological Survey. His publications include a *Report of the Geological Survey of North Carolina* (2 vols., 1875-81), a *Report on the Cotton Production of Virginia* (1884), and *Ores of North Carolina* (1888).

KER/RIL. The black-banded sea snake (*Distira cyanocincta*), one of the most numerous and venomous of the sea snakes (q.v.), prevalent from the Persian Gulf to Japan. It is about 6 feet long, greenish olive in color, marked by a series of saddle-shaped bars or patches across the back at intervals about equal to their own width. A similar species is illustrated on the Plate of FOREIGN VENOMOUS SERPENTS with SNAKE.

KERR/VILLE. A city and the county seat of Kerr Co., Tex., 71 miles by rail northwest of San Antonio, on the Guadalupe River, and at the terminus of a branch of the San Antonio and Aransas Pass Railroad (Map: Texas, C 4). It carries on a large trade in wool and mohair, being one of the leading wool markets of the State, also in cotton, various lumber products, live stock, hides, etc., and has flouring mills, cotton gins, and quarries. The town is situated at an elevation of 1750 feet and enjoys considerable popularity as a health resort. It contains the Scofield School for Girls and the Kerrville Sanitarium. Pop, 1900, 1423; 1910, 1843.

KER'RY, kër'í. A maritime county in the southwest of Ireland, in the Province of Munster, bounded north by the estuary of the Shannon and west by the Atlantic Ocean (Map: Ireland, B 7). Area, 1811 square miles. The surface is rugged, wild, and mountainous, the highest peak of Ireland, Carran Tual, being in this county. Kerry contains the Lakes of Killarney. The manufactures are inconsiderable; oats and butter are the chief exports, and fisheries on the coast are extensive and profitable. Chief towns, Tralee (the county town), Killarney, Listowel, Cahersiveen, Kenmare, and Dingle. Pop., 1841, 294,100; 1901, 165,726; 1911, 159,191.

KERSAINT, kër'sän', ARMAND GUY SIMON DE COETNEMPREN, COUNT DE (1742-93). A French naval officer and politician, born at Paris, July 29, 1742. His father, Guy François de Coetnempren, Count de Kersaint, was a distinguished naval officer. The son entered the navy in 1755 and in 1757 was promoted to the rank of ensign for bravery in action. In 1782, at this time a captain, he took part in an expedition to Guiana. Before the Revolution the officers of the French navy were divided into two parties—the reds (nobles) and the blues (commons or *roturiers*)—and at its outbreak Kersaint aligned himself with the latter as the party of progress. He attacked feudal privileges, and as a member of the Assembly he voted for the deposition of the King. On Jan. 1, 1793, he was appointed a vice admiral and began to devote himself

earnestly to the improvement of the navy and of the national defense. The bloodthirsty measures of the Revolutionary leaders soon caused him to rebel at their acts. He voted against the execution of the King, and after the latter's death he strongly opposed the actions of the Revolutionary Tribunal, denounced the September massacres, and attacked Marat. Accused of conspiring against the state and for the restoration of the monarchy, he was arrested Sept. 23, 1793, and executed December 4.

KERSAINT, C. L. DE. See DURAS, CLAIRE LECHAT DE KERSAINT, DUCHESS OF

KER'SEY, kër'zi (from *Kersey*, a village near Hadleigh in Suffolk, England, formerly noted for its woolen trade). A light-weight woolen cloth, having a soft nap and smooth face, the result of careful finishing processes. It is usually woven with a twill which throws the warp on the face. See CASSIMERE.

KER'SHAW, JOSEPH BREVARD (1822-94). An American soldier in the Confederate service, born at Camden, S. C. He was admitted to the bar in 1843 and was a member of the South Carolina Senate from 1852 until 1856. At the beginning of the Civil War he commanded the Second South Carolina Volunteers and took part in the first battle of Bull Run. He was commissioned brigadier general on Feb. 13, 1862, and commanded a brigade in the Peninsular campaign, at the close of which he joined the Confederate forces in northern Virginia and took part in the Maryland campaign. Towards the end of the battle of Fredericksburg he succeeded Gen. T. R. R. Cobb, upon the latter's death, and repulsed the last two attacks made by the Federals on Marye's Hill. The next year he was engaged in the battle of Gettysburg and then was transferred with Longstreet's corps to the West, where he took part in the charge which destroyed the Federal right wing at Chickamauga. After the relief of Knoxville and Longstreet's retreat to Virginia, he commanded a division in the battles of the Wilderness, Spottsylvania, and Cold Harbor, and was engaged in the Shenandoah campaign of 1864 against Sheridan. After the evacuation of Richmond his troops formed part of Ewell's corps, which was captured at the battle of Sailor's Creek, April 6, 1865. At the close of the war he returned to South Carolina and in 1865 was chosen President of the State Senate. He was judge of the Circuit Court from 1877 till 1893. In 1894 he was appointed postmaster of Camden, an office which he held until his death in the same year.

KERTBÉNY, kért'bä-ny', KARL MARIA (real name, BENKERT) (1824-82). An Hungarian author. He was born at Pest, and after the age of 20 traveled considerably abroad, visiting numerous cities of central and western Europe, where many of his literary works were written. Besides German translations of Hungarian poets, such as Arany, Petöfi, Jókai, and Vörösmarty, which are widely known, and essays on literary and other subjects, he wrote *Ungarns deutsche Bibliographie, 1801-60*, continued by Petrik and published in 1886.

KERTCH, kërçh. A fortified seaport in the Government of Taurida, Russia, situated at the foot of a hill on the east extremity of the Crimea, known as Kertch Peninsula (Map: Russia, E 5). It is regularly built, with wide streets and houses mostly of stone. Its oldest building is the church of St. John the Baptist,

built in Byzantine style and dating, according to an inscription on one of its pillars, from 717 A.D. In the vicinity of the town are a number of ancient mounds, which have yielded, and still yield, numerous relics, most of which are now in the Hermitage at St. Petersburg. The catacombs in the vicinity of Kertch contain many ancient inscriptions on their walls. The chief manufacturing establishments of Kertch are flour mills, saw mills, limekilns, breweries, and tobacco, leather, cement, candle, and soap factories. Owing to its position on the strait between the Sea of Azov and the Black Sea, Kertch enjoys a thriving export trade; in addition to its own manufactures there is a considerable trade in iron ore from the neighboring mines, grain, linseed, fish, cement, wool, and hides. The herring fisheries are of some importance, and fish is one of the chief articles of trade. Kertch is a popular bathing resort, and the mud baths of Tchrokrak, in the vicinity, are famous for the cure of rheumatism, while those of Kertch itself are only slightly inferior. Pop., in 1910, 56,770. Kertch occupies the site of the ancient Panticapæum, a colony of Miletus and later the capital of the Kingdom of Bosphorus. It fell in the thirteenth century into the hands of the Tatars, who ceded it to the Genoese in 1318, when it became known as Cerchio. The Turks took it at the end of the fifteenth century, and the Russians in 1773. In 1855 it was completely destroyed by the allied armies, but was soon rebuilt.

KERVYN DE LETTENHOVE, kër-vin' de lèt'ten-hò've, *Fr. pron.* kâr-vân', JOSEPH MARIE BRUNO CONSTANTIN (1817-91). A Belgian historian, born in Saint-Michel, Flanders. He was a Catholic member of the Belgian Chamber of Deputies and Minister of Public Instruction (1870-71), correspondent of foreign scientific societies, and preëminent in his own country as an investigator of the national antiquities. He made translations of some of Milton's shorter poems (1839), published two volumes of Froissart (1855) crowned by the French Academy, and edited the *Lettres et négociations de Philippe de Commines* (1867), but is more specially remembered for his *Histoire de la Flandre* (1847-50), *Jacques d'Artevelde* (1863), *Histoire et croniques de Flandre* (1879-80), *Relations politiques des Pays-Bas et de l'Angleterre* (1882-87), *Les Huguenots et les gueux* (1883-86), and *Marie Stuart* (1889).

KESSEL, VAN. A Flemish family of painters, all born in Antwerp, the earliest of whom was JEROOM (1578-c.1636), portrait, animal, and still-life painter, pupil of Cornelis Floris. He worked from about 1606 in various cities of Germany (Frankfort, Augsburg, Strassburg, and Cologne), chiefly painting portraits, and before 1622 appears settled again at Antwerp as the son-in-law of Jan Breughel (Velvet Breughel), in whose landscapes he supplied the animals.—His son JAN THE ELDER (1626-79) painted landscapes, flowers, fruit, and animals, was a pupil of Simon de Vos and of Jan Breughel, and accompanied his son JAN THE YOUNGER to Madrid. The museum there has a "Garland around Infant Jesus and St. John" (figures by Van Thulden), and 40 small pictures with animals by him. A "Concert of Birds" is in the Antwerp Museum; "Boar-Hunt," "Combat between Bear and Snake," "Landscape with Birds," and "Landscape with Fable of Stork and Fox," are in the Vienna Museum; others are in the

Louvre, Paris, the Uffizi Gallery, Florence, and in the museums at The Hague, Brunswick, Stuttgart, Nuremberg, Stockholm, and elsewhere.—His son and pupil FERDINAND (1648-96) painted similar subjects in a kindred manner, but also attempted large historical subjects by order of King John Sobieski of Poland, for whom he executed, moreover, "The Four Elements" and "The Four Continents" and, after both perished in the flames, repeated them on a larger scale. About 1688 he settled at Breda, where he did some decorative work in the palace of King William III.—JAN THE YOUNGER (1654-1708), also son and pupil of Jan the Elder, went to Madrid in 1680 and acquired reputation as a portrait painter, but also treated historical and all those subjects which his father cultivated, and was made court painter by Charles II in 1686. His portrait of Philip IV is in the museum, and two mythological scenes, "Psyche Found by Cupid" and "Psyche Surrounded by Wild Animals," are in the Alcázar at Madrid.—JAN THOMAS (Nicolae) (1677-1741), nephew and pupil of Ferdinand, was a genre painter in the manner of David Teniers and, through his village festivals, became well known in Paris, whither he had gone early in life. In 1704 he returned to Antwerp to buy his mastership. Subsequently inheriting his uncle's property, he fell into dissipation and died in want.—Another JAN VAN KESSEL (c.1641-90), who was born and died at Amsterdam, painted landscapes in the manner of Jacob Ruysdael and Hobbema. His winter landscapes and his views of Amsterdam are particularly valued and may be seen in the museums at Amsterdam, Rotterdam, Antwerp, Darmstadt, and in the Old Pinakothek at Munich.—THEODORUS VAN KESSEL (c.1620-?), engraver and etcher, born in Holland, settled at Antwerp in 1652 and is known by etchings after Rubens, Van Dyck, Titian, Guido Reni, and others. These last two Van Kessels were probably not related to the Antwerp family.

KESTER, PAUL (1870-). An American dramatist, a brother of Vaughan Kester. He was born at Delaware, Ohio. He is author of *Tales of the Real Gypsy* (1897), of verse; and of the following plays: *The Countess Rowdine*, with Minnie Maddern Fiske, *The Cousin of the King*, with Vaughan Kester; *What Dreams May Come*; *Eugene Abram, Lamar* (1893); *The Musketeers* (1898); *Guy Mannering* (1898); *Sweet Nell of Old Drury* (1900); *When Knighthood was in Flower* (1901), from the novel of Charles Major; *Queen Frametta* (1902); *The Cavalier* (1902), with George Middleton from G. W. Cable's novel, *Dorothy Vernon* (1903); *Mademoiselle Mars* (1903); *Friend Hannah* (1906); *Don Quixote* (1908); *Lily, the Bull Topper* (1910). Among the notable actors and actresses who have starred in his plays are Madame Modjeska, Alexander Salvini, Madame Janauschek, Julia Neilson and Fred Terry, Ada Rehan, Julia Marlowe, E. H. Sothern, Annie Russell, Marie Tempest.

KESTER, VAUGHAN (1869-1911). An American novelist, brother of Paul Kester, born at New Brunswick, N. J., and educated in the public schools of Mt. Vernon, Ohio, and under a tutor. He made story-writing and miscellaneous literary work his profession, and was on the staff of the *Cosmopolitan* magazine. His novel *The Prodigal Judge* (1911) is notable for its whimsical humor and for the faithfulness of its local (Southern) characterization. Other of

his writings include: *The Manager of the B. & A.* (1901); *The Fortunes of the Landrays* (1905); *John o' Jamestown* (1907); and, posthumously published, *The Just and the Unjust* (1912) and *The Hand of the Mighty, and Other Stories* (1913), which contains a sketch of the author by Paul Kester.

KESTNER, AUGUSTE SCHEURER. See SCHEURER-KESTNER, AUGUSTE

KES'TREL. One of the smallest of the true falcons or "noble" birds of prey (*Falco tinnunculus*), scarcely more than a foot in length and the commonest of all the British Accipitres. It is widely distributed in the Old World, occurring in Asia and north Africa as well as in nearly all Europe, where it occurs in a number of well-defined subspecies. It is nearly related to the common sparrow hawk of America, which it resembles in color and habits as well as in size. The general color is brick red above, buff, fawn, or rufous beneath, everywhere marked with black, and with the head and rump bluish gray. The sexes differ markedly in color, the female tending towards rusty brown, and the male towards ashy gray. Like all true falcons, the kestrel is a strong flier, but it is easily distinguished from other falcons and hawks by its habit of hovering in one spot for some time, sustaining itself by the rapid movement of the wings. When doing this, it always keeps its head to the wind, whence has arisen one of its popular names, windhover. Like the sparrow hawk, the kestrel is a very useful bird, its principal diet being mice and insects, in the destruction of which it renders real service to the farmers. It occasionally captures small birds and can be trained to do so, but its use in falconry was always confined to the lower classes, among whom the use of the larger falcons was forbidden. For this reason the name "kestrel" came to be applied as a term of contempt. The nest is made in hollow trees, in crevices of cliffs, or even in deserted crows' nests, and the eggs are usually about five in number, creamy white, more or less spotted with brown. See PLATE OF FALCONS AND FALCONRY.

KESWICK, kēz'ik. A market town in Cumberland, England, at the northern extremity of Derwentwater, and at the foot of Skiddaw Mountain, 22 miles south-southwest of Carlisle (Map: England, C 2). It is a favorite tourists' resort, a centre of picturesque scenery, and contains the residence of Southey (Greta Hall), also his burial place, and a museum of natural history. Silver, lead, and zinc ores are mined, and Keswick is well known for its manufactures of lead pencils. The town owns its water and electric-lighting supplies. Pop., 1901, 4451; 1911, 4403.

KETCH (from Turk. *qâiq*, *qaiq*, boat). A small sailing vessel of 50 to 300 tons, formerly quite common in the Mediterranean, but now not so much used. Ketches had two masts, both square-rigged; the mainmast, very much higher than the after mast, was placed very nearly in the centre of the vessel, and the great spread of after canvas was balanced by large and numerous fore and aft sails forward. The ketch was at one time a favorite yachting rig and was also much used for bomb vessels, the clear forward deck being most convenient for mounting a mortar.

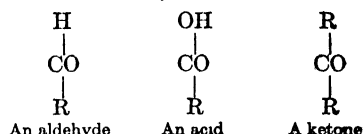
KETCH, JACK. The popular name for a public hangman, derived from John Ketch, an English executioner notorious in the seventeenth

century. The name is also referred to Jaquet, a former holder of the manor of Tyburn.

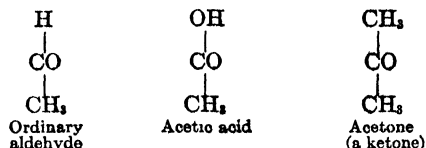
KETCHIKAN, kēch'i-kān'. A port of entry at the south boundary of Alaska, 600 miles north of Seattle (Map: Alaska, O 8). It had a population of 1613 in 1910. Apart from its stirring business activity, it is an important place, as by law it is an obligatory port of call for all ships engaged in trade in southeast Alaska. It is a modern city, with electricity and other conveniences, churches, schools, banks, etc. Ketchikan is the commercial centre of transportation and of trade for the adjacent regions and mining districts. Among these is the rich and productive copper region of Prince of Wales Island. The adjacent native village (pop., 154) has a government school. The climate is unusually mild in winter, December, with an average temperature of 26°, being the only month below freezing. The rainfall is very heavy, exceeding 150 inches annually.

KETEL, kâ'tel, CORNELIS (1548-1616). A Dutch painter, born at Gouda. He was a pupil for a very short time of Anthonie van Montfort at Delft and then went to Paris and worked at Fontainebleau. Afterward he went to England (1573) and painted a number of portraits at the court. In 1581 he settled at Amsterdam, where his principal work, a "Banquet of Marksmen" (1588), is preserved in the Rijks-Museum.

KE'TONES (apocoped from *acetone*, from *acetic*, from Lat. *acetum*, vinegar), or ACETONES. A large and important class of carbon compounds that are in many respects similar to the aldehydes. While the aldehydes (q.v.) are characterized by the carbonyl group CO to which one hydrogen atom and some hydrocarbon radicle are attached, and while most organic acids are characterized by the carbonyl group CO to which one hydroxyl group (OH) and some hydrocarbon radicle are attached, the ketones contain a carbonyl group to which *two* hydrocarbon radicles are attached. If R and R' stand for any hydrocarbon radicles, like methyl (CH₃) or ethyl (C₂H₅), the following formulas represent respectively the structure of any aldehyde, any organic acid, and any ketone:



For example, ordinary aldehyde, acetic acid, and acetone (the simplest ketone) are represented respectively by the following structural formulas:



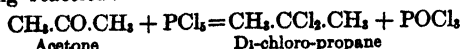
Just as aldehydes are obtained from primary alcohols by oxidation, so are ketones produced by the oxidation of secondary alcohols. (See ALCOHOLS.) In either case the oxidation consists in the removal of two hydrogen atoms from the alcohol molecule. Thus, normal propyl alcohol, CH₃.CH₂.CH₂OH, yields (H, C, H, C, H, C) (propionic aldehyde), while iso-propyl alcohol, (H, C, H, C, H, C), yields CH₃.CO.CH₃ (acetone). One of the general methods employed for the

preparation of ketones consists in heating the calcium or barium salts of organic acids. Thus, acetone may be prepared by distilling calcium or barium acetate. (See ACETONE.) From the higher fatty acids ketones may be obtained directly by heating the acids with phosphoric anhydride. Thus, heptylic acid may be directly decomposed, according to the following equation:



Ketones may also be prepared by the Grignard reaction (q.v.).

Like the aldehydes, ketones are capable of combining with acid sodium sulphite, with hydrocyanic acid, with hydrazine derivatives (like phenyl hydrazine), etc., and precisely as in the case of aldehydes, two chlorine atoms may be readily substituted for the oxygen of the carbonyl group, by the action of phosphorus pentachloride. Thus, acetone may be transformed into di-chloro-propane, according to the following reaction.



The most important difference between the aldehydes and the ketones consists in the fact that, while the former are readily oxidized to acids whose molecules contain the same number of carbon atoms as the aldehydes, the molecule of a ketone is split up, on oxidation, so that compounds of simpler structure, i.e., containing a smaller number of carbon atoms, are obtained. Thus, acetone (3 carbon atoms) breaks up into acetic acid (2 carbon atoms) and carbon dioxide (1 carbon atom), according to the following equation:



If at least one of the hydrocarbon radicles composing the molecule of a ketone belongs to the benzene series, the ketone is called an *aromatic ketone*. Thus, benzophenone, $\text{C}_6\text{H}_5\cdot\text{CO}\cdot\text{C}_6\text{H}_5$, which may be obtained by heating the calcium salt of benzoic acid, is an aromatic ketone. The physical and many of the chemical properties peculiar to a given ketone depend, of course, not only on the characteristic carbonyl group (CO), but also on the nature of the radicles to which that group is attached. See ALDEHYDES.

KETTELER, kët'te-lër, CLEMENS AUGUST, BARON VON (1853-1900). A German diplomat, born at Potsdam and educated for the army. Upon reaching the grade of second lieutenant he resigned his commission to enter the diplomatic corps. In the same year (1882) he went as a student interpreter to China and in 1883 as Councillor of State distinguished himself in the disturbances of that year in Canton. After being Consul at Tientsin, in 1892, he became Secretary of the German Legation at Washington (1893). Three years afterward, having married an American, he was named Minister to Mexico, whence he returned to China in 1899 as Plenipotentiary at Peking. During the Boxer rebellion of the following year, Ketteler, who was an excellent Chinese scholar, represented the diplomats of the other countries. On June 20 he started for an interview with the government and was shot in his sedan chair by a Chinese officer.

KETTELER, WILHELM EMANUEL, BARON

VON (1811-77). A German Roman Catholic ecclesiastic and Ultramontane leader. He was born at Münster, Prussia, and was educated by the Jesuits at Brieg in Switzerland, then studied law at Göttingen, Berlin, Munich, and Heidelberg, and entered the civil service at Münster, but suddenly changed his course and began the study of theology. He was ordained in 1844 and was a prominent member of the Frankfort Parliament (1848). In 1850 he was consecrated Bishop of Mainz. The object of his life was to gain for the Church absolute freedom from state control; he therefore opposed Bismarck and the Hohenzollerns with unremitting energy. At the Vatican Council he voted against the declaration of papal infallibility, but on its pronouncement submitted to it immediately and even defended the new dogma in several pastoral letters. Henceforth he assumed the leadership of the Ultramontane party in its contest with the German Empire, advocating a policy of unconditional resistance to the state's legislation in connection with ecclesiastical affairs. (See KULTURKAMPF.) He wrote: *Freiheit, Autorität und Kirche* (7th ed., 1862); *Die wahren Grundlagen des religiösen Friedens* (1868); *Das allgemeine Konzil und seine Bedeutung für unsere Zeit* (5th ed., 1869); *Die Katholiken im deutschen Reiche* (5th ed., 1873); *Der Kulturkampf gegen die katholische Kirche, etc.* (1874).

KETTERING. A market town in Northamptonshire, England, 14 miles northeast of Northampton (Map: England, F 4). It has iron-ore quarries, blast furnaces, and manufactures boots and shoes, brushes, clothing, and agricultural tools. The large and handsome parish church of St. Peter and St. Paul has a tower dating from 1450, and there is a fine town hall with corn exchange. Modern buildings include a free library, hospitals, and Victoria Hall. Kettering has a free grammar school and owns its water works. Pop., 1901, 28,653; 1911, 29,972.

KET'TLEDROM. A metallic kettle or basin, made of copper or brass, with a head of vellum, which is lapped over an iron ring and fitted outside of the kettle. By means of screws the head may be tightened or loosened. The drums are played by means of a mallet covered with felt or leather. By means of the screws the instruments can be tuned. In modern orchestras there are generally three kettledrums, tuned in the tonic, dominant, and subdominant. Modern composers require the kettledrums to change their tones within the same movement and often without many bars of rest. To enable the performer to meet these requirements, Richard Ludwig, of Leipzig, invented a kettle-drum which in very short time can be tuned to any interval. Instead of turning each individual screw the performer turns only one large one, by means of which all the others are operated. The larger of the two drums is tuned in F, the smaller in Bb. By means of a pedal any interval within a perfect fifth can be obtained; so that the larger drum can produce all tones between F and c, and the smaller all tones between Bb and f, giving the performer the possibility of producing any chromatic interval between F and f. The chief use of the kettle-drum is to emphasize rhythmic figures. Consult P. de Lavernière, *La timbale* (Paris, 1913).

KETTLEDROM. A term which used to be employed—and still is, perhaps—to describe a

social gathering, a sort of afternoon tea, and generally a gathering of women. This latter use of the word is said to have originated in the British army in India. It sometimes happened in the emergencies of camp life that in an entertainment given by officers and their wives there was a lack of requisite furniture, so that the heads of kettledrums were made to serve in place of tables to hold the cups of tea. Hence, by metonymy, the article used gave name to the occasion on which it was used.

KETT'S REBELLION. A popular outbreak which took place in Norfolk, England, in 1549, under the leadership of Robert and William Kett, brothers. They are mentioned as a tanner and a mercer, living in Wymondham, Norfolk, but both were landholders of consequence, Robert holding the manor of Wymondham, besides other lands. He was the chief leader of the revolt, although assisted by William and two other brothers. The rising began at Attleborough on June 20, 1549, with the destruction of the fences and hedges. . . . the common lands of Harpham and . . . belonging to the manor of Wilby; but the Kett brothers were not drawn into it until the 9th of July. Having accepted the command, Robert Kett led the insurgents to Norfolk, establishing a camp on Mousehold Heath near by, where his forces increased to the number of 16,000 men. He maintained excellent order, establishing his tribunal under an oak tree, which long bore the name of Kett's Oak. There the delegates of 21 hundreds of Norfolk and one hundred of Suffolk met and drew up a petition of their grievances, which was sent to the Privy Council in London. From this petition it is evident that the revolt was chiefly directed against the inclosures of the common land and the consequent eviction of the tenantry, all of which was being done contrary to custom and to laws recently enacted by Parliament. The petition also contained moderate demands for the redressal of other feudal wrongs, one of which specified that all bondmen be made free. On August 1 Kett captured Norfolk, putting to rout a force of 2500 men sent to its rescue. The revolt was finally suppressed by a force under the Earl of Warwick, in a bloody battle at Dussindale, in which more than 3500 of the insurgents were killed. He gained this victory through a force of German lanzknechts, whose firearms the insurgents were unable to withstand. Both of the Ketts were captured and suffered death on the gallows. Consult Russell, *Kett's Rebellion* (London, 1850), and Clayton, *Robert Kett and the Norfolk Rising* (ib., 1912).

KETUPA, kē-tōō'pā. A fishing owl of the Oriental genus *Ketupa*, specifically the Javan one (*Ketupa javanensis*). Other species are commonly known from Asia Minor to southern China. All are large tufted owls, with the feet naked of feathers, and the talons large, strong, and roughened, in adaptation to the catching of living fish and crabs, upon which this genus mainly feeds, though birds and small mammals are also taken.

KEUH-FOW, kyōō'fou'. A city in China. See KIUH-FOW.

KEUI, kē'ā. See BOGHAZ-KIEUI.

KEUKA (kē-ū'kā) **LAKE**, or CROOKED LAKE. A Y-shaped lake, lying partly in Steuben and partly in Yates County, west-central New York (Map: New York, C 6). The stem and the branches lie in narrow valleys formed by hills.

All of the branches are singularly uniform in their width, the two northern arms being about ½ mile wide, and the main stem about 1 mile wide. Much of the scenery from the lake and the shores is very beautiful. At the southern end of the lake, which is its head, is Hammondsport (pop., 1910, 1254), and at the foot Penn Yan (q.v.). The waters are carried eastward to Seneca Lake (q.v.).

KEUPER, koī'pēr (dialectic German term, near Coburg, for red, sandy clay). The upper division of the Triassic system in Europe. It is represented in Germany by a series of marls, sandstones, dolomite and gypsum beds, more than 1000 feet thick. In Great Britain it includes marls and sandstones with gypsum and rock salt and has a maximum thickness of about 3000 feet. Bones and footprints of the labyrinthodont and saurian reptiles are found in the Keuper.

KEW, kū. A township in Surrey, England, on the Thames, 6 miles west-southwest of Hyde Park Corner, London (Map: London, E 5). It owes its celebrity to the Royal Botanic Gardens, about 270 acres in extent, with their famous collection of plants, native and exotic. There are numerous conservatories and hot-houses, a palm house, an arboretum, three museums, a winter garden or temperate house, an American garden, a ten-story pagoda 163 feet high, a Pantheon and a Temple of Victory with dates and mementos of historic English battles, a laboratory, and the elegant North Gallery, containing a valuable collection of paintings of tropical flowers. The Botanic Gardens, commenced by the mother of George III, owe much of their celebrity to Sir W. J. Hooker (q.v.) and Sir Josiah D. Hooker. They were presented to the nation by Queen Victoria in 1840, since when they have been open to the public. There is also an observatory, used chiefly as a meteorological station. Kew Palace, once the favorite residence of George III, is close to the northern entrance. The church contains an organ which once belonged to Handel; in the churchyard are buried the artists Meyer and Gainsborough. Pop., 1901, 2699; 1911, 2806.

KEWANEE, kē-wā'nē. A city in Henry Co., Ill., 56 miles north by west of Peoria, on the Chicago, Burlington, and Quincy Railroad (Map Illinois, D 3). It has a public library and two parks. Coal is mined in the vicinity, and there are extensive tube and boiler works, employing about 4900 persons, and manufactures of agricultural implements, steam-heating apparatus, gasoline engines, water-supply systems, pumps, gloves and mittens, etc. Kewanee has adopted the commission form of government, the mayor and four commissioners being elected every four years. The water works are owned and operated by the municipality. Pop., 1900, 8382; 1910, 9307; 1914 (U. S. est.), 13,473.

KEWAUNEE. A city and the county seat of Kewaunee Co., Wis., on Lake Michigan at the mouth of the Kewaunee River, 37 miles east of Green Bay, on the Kewaunee, Green Bay, and Western Railroad (Map: Wisconsin, F 4). It is in a fertile agricultural and dairying country and has pea canneries, gas-engine works, agricultural implement works, planing mills, foundries, machine shops, etc. Kewaunee was settled in 1850 and was incorporated in 1882. The electric-light plant is owned by the city. Pop., 1900, 1773; 1910, 1839.

KEWEENAWAN (kə'wē-nə'wan) **SERIES.**

A group of conglomerates, sandstones, and lime-stones, with interbedded sheets of volcanic rocks, which outcrop in the western Lake Superior region. They belong to the upper part of the Algonkian, although some geologists have classed them with the Cambrian. Their maximum thickness is about 40,000 feet. The strata, which appear in great force on Keweenaw Peninsula and farther westward, dip below Lake Superior and come to the surface again on the northern shores in Minnesota. The rich copper deposits of Michigan occur in this series. See **PRE-CAMBRIAN FORMATIONS. ALGONKIAN SYSTEM.**

KEY (AS. *cæg*, *cæge*, OFries. *kai*, *kei*; probably connected with OHG. *heil*, Ger. *Keil*, Icel. *keiler*, wedge, peg). A common heraldic bearing in the insignia of sees, seats of learning, and religious houses, particularly such as are supposed to be under the patronage of St. Peter. Two keys in saltire are frequent, and keys are sometimes *interlaced* or linked together at the *bows*, i.e., rings. Keys *indorsed* are placed side by side, the wards away from each other. In secular heraldry keys sometimes denote office in the state. See **HERALDRY.**

KEY. In mechanics and building any piece driven into a recess provided for it between two pieces, for the purpose of holding them immovably together, is called a key. Keys are usually tapering or wedge-shaped and are commonly used in machinery to secure a wheel to its pinion or axle, in anchors to prevent the slipping of the stock in the shank, and in carpentry to lock the members of a scarfed joint; while the crowning voussoir of an arch, which "locks" the arch, is called the key or keystone. In plastering, the hold of the plaster on the masonry, brickwork, or lathing, by its being forced into interstices, is called its key.

MAJOR KEYS

No. of sharps	0	1	2	3	4	5	6	7	8	9	10	11	12
Names of keys {	C	G	D	A	E	B	F#	C#	G#	D#	A#	E#	B#
Names of keys {	(c) <i>dh</i>	<i>ah</i>	<i>eh</i>	<i>bh</i>	<i>fh</i>	<i>ch</i>	<i>Gh</i>	<i>Dh</i>	<i>Ah</i>	<i>Eh</i>	<i>Bh</i>	<i>F</i>	<i>C</i>
No. of flats	12	11	10	9	8	7	6	5	4	3	2	1	0

MINOR KEYS

No. of sharps	0	1	2	3	4	5	6	7	8	9	10	11	12
Names of keys {	A	E	B	F#	C#	G#	D#	A#	E#	B#	F#	C#	G#
Names of keys {	(a) <i>bh</i>	<i>fh</i>	<i>ch</i>	<i>gh</i>	<i>dh</i>	<i>ah</i>	<i>Eh</i>	<i>Bh</i>	<i>C</i>	<i>G</i>	<i>D</i>	<i>A</i>	<i>B</i>
No. of flats	12	11	10	9	8	7	6	5	4	3	2	1	0

KEY. In music, all the tones of any given scale considered collectively and in their harmonic rather than their melodic relations. The term is not at all synonymous with "scale," but has a much broader meaning. A scale consists only of single tones in melodic succession, whereas a key comprises not only the tones of the scale itself, but all chords constructed upon those tones. Each key is named after the keynote or tonic, i.e., the lowest tone of the scale belonging to that key. There are as many keys as there are scales, i.e., 12 major and 12 minor. The major and minor scales differ in the position of the semitone—the former having this semitone between the third and fourth, the latter between the second and third degrees. The semitone leading into the octave, and known as the *leading tone*, is common to both major and minor scales and is found between the seventh and eighth degrees. For the major scales the one beginning on C is regarded as the fundamental scale. Because all the tones appear without any chromatic alteration, it is also called the *natural*

scale. This is really a misnomer, since all major scales are exactly alike as regards the succession of tones and semitones; there is only a difference in pitch. The only reason why this scale is called natural is that on instruments having a keyboard all the tones are played on the white keys, while all other scales require the use of a number of black keys. For instance, if the major scale is begun on D the F must be sharpened, so as to preserve the semitone between the third and fourth degrees, for the same reason the C must also be sharpened. Among the minor keys that of A bears the same relation to all the others as the key of C bears to the other major keys. Every composition is written in a definite key, which can be determined at once by glancing at the *key signature*. Instead of each sharp or flat required in the . . . it is customary to indicate at the beginning of a piece all the notes which require chromatic alteration. Whether the mode is major or minor can generally be determined by the opening chord, for, as a rule, compositions begin with the tonic chord. The keys of C major and A minor, requiring no chromatic alterations, have therefore no signature. The number of sharps or flats for the other keys is determined by the circle of fifths. (See **TEMPERAMENT.**) Taking the key of G, whose tonic lies a fifth above C, one sharp is required; the key of D, whose tonic lies a fifth above G, requires two sharps; etc. The number of flats is determined by proceeding from C in fifths downward. The signatures of minor keys are determined in the same manner. Since the key of A minor lies a minor third below the corresponding major key of C, it follows that all other minor keys are found a minor third below the corresponding major keys. The following is a complete table of all the key signatures:

The keys printed in capitals are the only ones in practical use. Owing to the equal temperament (q.v.) now in use for all instruments, enharmonic changes cause no difficulty. On keyed instruments, like the pianoforte or organ, the tones F# and Gb are identical, being both played on the same key. It is therefore immaterial for such instruments whether a piece is written in F# or Gb. It certainly is much simpler to write in Db with only five flats than in the enharmonic key of C# with seven sharps. In the above tables the keys printed in small letters are such as correspond to those in large letters above or below. They are given only to show that by going through the circle of fifths we again come to the starting point.

Just as the several tones of a scale bear a certain relationship to one another, so there exists also a similar relationship among the keys. A *relative* or *parallel* key is a minor key having the same signature as its corresponding major key or vice versa. Thus, C major and A minor, C minor and Eb major, A major and F# minor, are *relative* or *parallel* keys. *Related* keys are those whose tonic tones stand in some relation to one another. G and F are closely related to C because the tonic of the former key is the fifth above, that of the latter key the

fifth below C. *Remote or extreme keys* are those whose tonic tones stand in no or some very distant relation to one another. See **MAJOR**; **MINOR**; **MODES**; **TONALITY**.

In another sense the word "key" is used to denote a series of levers composing the keyboard of keyed instruments. In the pianoforte these keys are manipulated by the fingers. They cause the hammers to strike the strings. The organ has a similar set of keys, which open valves for the passage of the wind into the pipes. There is also a set of keys manipulated by the feet and called *pedal*. In the instruments of the woodwind class the levers lying on the outside of the tube and covering the air holes are also called keys. They differ from the valves of brass instruments, which latter are inside of the tube. See **KEYBOARD**, **VALVE**.

KEY, **kē**, **SIR ASTLEY COOPER** (1821-88). A distinguished British naval officer, son of the surgeon Charles Aston Key. He was born in London and entered the navy in 1833. He served with distinction on the South American Station (1844-46), in the Baltic during the Crimean War (made C.B. in 1855), and in China in 1857. In 1858 he was appointed a member of the commission of national defense, and in 1863 captain of the gunnery ship *Excellent* and superintendent of the Royal Naval College. In 1866 (then a rear admiral) he became director of naval ordnance. In 1872 he organized and was made president of the new Royal Naval College at Greenwich and in 1873 was made a K.C.B. and a vice admiral. He was commander in chief on the North American and West Indian Station in 1876 and became admiral in 1878 and senior naval lord of the Admiralty and G.C.B. in 1882. For nearly a quarter of a century he took a leading part in shaping the policy of the British navy, in training its personnel, and in developing its matériel.

KEY, **kē**, **DAVID MCKENDREE** (1824-1900). An American jurist and cabinet officer, born in Greene Co., Tenn. He graduated at Hiwassee College in 1850, was admitted to the bar, and in 1853 became a resident of Chattanooga. He opposed the secession movement in Tennessee and rendered valuable aid to Andrew Johnson, but, unlike him, after the secession of the State, he joined the Confederate army and served throughout the war in the Forty-third Tennessee Regiment, of which he became lieutenant colonel. After the war he joined the Republican party, was a prominent member of the State Constitutional Convention in 1870, and in 1875 was appointed to succeed Andrew Johnson in the United States Senate, where he served until 1877. He was then defeated for reelection, but in the same year was appointed Postmaster-General in President Hayes's cabinet. In 1880 President Hayes appointed him United States district judge for the eastern and middle district of Tennessee, from which position he retired in 1894.

KEY, **ki**, **ELLEN (KAROLINA SOFIA)** (1849-). A Swedish social and ethical writer, of international importance. The daughter of Emil Key and his wife, née Countess Posse, she was born at "Sundsholm," Småland, of a family of landed gentry and statesmen in which strains of Scottish and English blood were blended. She was educated at home and became in her twentieth year the secretary of her father, a member of the Riksdag. From 1870 on she was a contributor to periodicals, on literary, historical, and sociological subjects. Her father's fortune

lost, she became a teacher in a private school, and in addition to teaching from 1880 to 1899 she was constantly writing and lecturing at the People's Institute at Stockholm and elsewhere. From 1899 to 1910 she lived much abroad, the success of her books afterward enabling her to make a permanent country home for herself in Sweden. An ardent feminist, with views of love and marriage that startle the conventional and with convictions on the sex relations that condemn at certain points old moral standards, she was exposed to unwarranted slander and abuse, which, however, was offset by the admiration of "advanced" thinkers everywhere—among them Mactierlinck, Bernard Shaw, Georg Brandes, and Havelock Ellis. Though known primarily as a writer on social ethics and sex questions, she gained distinction in several other fields. Her works have been translated into many languages, the following titles . . . of which have appeared in English . . . of the Child (1909); *Love and Ethics* (1911); *The Morality of Woman* (1911); *The Woman Movement* (1912); *The Torpedo under the Ark* ("Isaen and Women" (1912); *Rahel Varnhagen* (1913), a biography, *The Renaissance of Motherhood* (1914); *The Younger Generation* (1914). Important works of hers not Englished are: *The Misuse of Woman's Power* (1896); *Woman's Psychology and Woman's Logic* (1896); *Life-Lines* (1903-06). For some bibliographical and much general information, consult the brief biography, L. N. Hamilton, *Ellen Key: Her Life and her Work* (Stockholm, 1904; Eng. trans., New York, 1913), and *Nordisk Familjebok*, vol. xiii (Stockholm, n. d.).

KEY, **ERNST AXEL HENRIK** (1832-1901). A Swedish anatomist, born in Småland. He studied at Lund, became assistant surgeon at the Seraphim Hospital in Stockholm (1858), and studied pathology and histology in Germany under Schultze and Virchow. He was professor of pathological anatomy in the Caroline Institute of Stockholm (1862-97), of which he was for many years rector. In 1882 he became a member of the Swedish Lower House. Key edited *Nordiskt medicinskt Arkiv* (1869 et seq.), and the valuable collection, *Ur vår tids forskning* (1872-80), and wrote: *Studien in der Anatomie des Nervensystems und des Bindegewebes* (2 vols. 1875-76), which won him the Montyon prize from the French Academy. He also wrote on the history of Swedish medicine, especially ophthalmology (1892); and *Tull kirurgiens historia i Sverige* (1897).

KEY, **kē**, **FRANCIS SCOTT** (1780-1843). A lawyer, born in Frederick Co., Md., Aug. 9, 1780, noted in American letters as the author of "The Star-Spangled Banner." Key was a graduate of St. John's College, Annapolis, Md. He practiced law at Frederick, Md., in 1801, and later removed to Washington, where he became district attorney of the District of Columbia. In 1814, during the attack of the British on Baltimore, he went on an errand, under a flag of truce, to the British fleet, but was detained while the bombardment of Fort McHenry, the defense of Baltimore, was taking place. He watched the progress of the fight from the British ship during the night and in the morning, seeing the Stars and Stripes still waving triumphantly, composed his famous song. This was at once printed and became almost instantly popular. It was sung to the tune "Anacreon in Heaven," and is to-day perhaps the favorite heroic song

of America. By general order it is the national air in the army and navy. "The Star-Spangled Banner" was printed, with other poems by Key, in 1857, the volume as a whole adding nothing to his reputation. Consult: J. T. Brooke, *Sketch of the Character of the Late Francis Scott Key* (Cincinnati, 1843); F. S. Key-Smith, *Francis Scott Key, with a Glimpse of his Ancestors* (Washington, 1909); id., *Francis Scott Key, Author of the Star-Spangled Banner, What Else he Was, and Who* (ib., 1911).

KEY, THOMAS HEWITT (1799-1875). An English classical scholar, born in London. He graduated at Trinity College, Cambridge, in 1821, and studied medicine at Cambridge and at Guy's Hospital, London. In 1824 he was called to the chair of mathematics in the University of Virginia, then in its infancy. Ill health compelled his return to England in 1827. In 1828, when the University of London was founded, he accepted the chair of Latin there and held it until 1841. From 1842 until his death he was professor of comparative grammar in the same institution and at the same time served as head master of the preparatory school connected with University College; he had been joint head master of the school from 1832. As a philologist, he produced numerous pamphlets containing essays and reviews, and a controversial argument on Donaldson's *Varronianus*. He contributed to the *Penny Cyclopædia* and the *Journal of Education*. In 1846 he published a *Latin Grammar on the System of Crude Forms* (by "crude forms" he meant uninflected forms, word stems; he borrowed this device from the teaching of Sanskrit grammar). His other works include *Philological Essays* (1868) and *Language: Its Origin and Development* (1874), in which he advocated the onomatopoeic theory of the origin of language. His best energies were given to the construction of a *Latin-English Dictionary* (1888), which was published, after his death, in an unfinished state, by the Cambridge University Press. Consult Hicks, *T. Hewitt Key* (Cambridge, 1893).

KEYBOARD. A frame containing a set of keys, placed in the front part of the pianoforte or organ. The word is also applied to the keys, or digitals, taken collectively. The natural keys are of wood covered with white ivory, and the raised keys, touched to produce sharps and flats, are blocks of ebony or other hard black wood. The influence of the keyboard upon the development of modern music is important. The earliest keyboard of which we have record was that of the hydraulic or water organ, a Greek invention of the second century. In this the keys, 18 in number, were all level. Strange to say, the principle of the balanced key, which had to be rediscovered in the seventeenth century, was then well known. Our modern chromatic keyboard was in use as early as 1361, though the keys were so large that they had to be struck with the fist. Their width was, however, gradually lessened, and in the spinet made by Pasi, of Modena, in 1490 (the earliest instrument of this class), and in the organ of St. Blaise at Brunswick (1499), the compass was approximately that of our present keyboard. In most of the early instruments the natural notes are black and the sharps and flats white. Several attempts have been made to reform the keyboard. The principal objection to all rearrangements is the fact that there is a mass of beautiful music written for the modern pianoforte which could not be adapted to an instrument with a differ-

ently arranged keyboard. See CLAVICHORD; FINGER BOARD; HARPSICHORD; SPINET; TEMPERAMENT, VIRGINAL.

KEYES, KĒZ, CHARLES ROLLIN (1864-). An American geologist. Born at Des Moines, Iowa, he graduated from the State University of Iowa in 1887, and took his Ph.D. at Johns Hopkins in 1892. He assisted on the United States Geological Survey (1889-90), was paleontologist of Missouri (1890-92) and assistant geologist of Iowa (1892-94), directed the Missouri Geological Survey (1894-97), and served as president of the New Mexico State School of Mines (1902-06). After 1890 he was a consulting mining engineer and was interested in various mining operations. His publications include: *Geological Formations* (1892); *Coal Deposits of Iowa* (1893); *Organization of Geological Surveys* (1894); *Paleontology of Missouri* (1894); *Maryland Granites* (1895); *Origin and Classifications of Ore Deposits* (1900); *Genesis of Lake Valley Silver Deposits* (1907); *Ozark Lead and Zinc Deposits* (1909); *Deflation* (1910); *Mid-Continental Eolation* (1911), *Annotated Bibliography of Iowa Geology* (1913).

KEYES, EDWARD LAWRENCE (1843-). An American surgeon, son of Gen. E. D. Keyes. He was born at Charleston, S. C., graduated at Yale in 1863 and from the medical department of New York University in 1866, and studied in Paris for a time. He became surgeon to several New York hospitals and from 1869 to 1890 was a member of the faculty of the Bellevue Hospital Medical College. He published: *A Practical Treatise on the Surgical Diseases of the Genito-Urinary Organs*, with W. H. Van Buren (1874; 2d rev. ed., by E. L. Keyes and E. L. Keyes, Jr., 1905); *Tonic Treatment of Syphilis* (1877; rev. ed., 1896); *The Venereal Diseases* (1880); *Surgery of the Kidneys, the Bladder, and the Genitalia in the Male* (1905).

KEYES, EMERSON WILLARD (1828-97). An American lawyer and educator born at Jamestown, N. Y. In 1848 he graduated from the State Normal School at Albany. He was deputy superintendent of public instruction of New York in 1857-65 and acting superintendent in 1861-62. Admitted to the bar in 1862, in 1865 he became deputy superintendent of the banking department of New York State, from 1870 to 1873 he served as State bank examiner, and from 1882 to his death he was chief clerk of the Brooklyn (N. Y.) board of education. He assisted in framing the educational sections in the charter of Greater New York and published: *New York Court of Appeals Reports* (1867-69); *History of Savings Banks in the United States* (1876-78); *New York Code of Public Instruction* (1879); *Laws of New York Relating to Common Schools*.

KEYES, ERASMUS DARWIN (1810-95). An American soldier, born at Brimfield, Mass. He graduated at West Point in 1832 and was on duty in Charleston harbor, S. C., during the nullification excitement of that year. He was engaged in garrison duty or on frontier service against the Indians until the outbreak of the Civil War, when he was made colonel of the Eleventh Infantry and sent to New York to organize an expedition for the relief of Fort Pickens. On May 17, 1861, he was made brigadier general of volunteers, and on July 21 took part in the first battle of Bull Run. During the Peninsular campaign he commanded the Fourth Army Corps and was engaged in its chief ac-

tions. He resigned in 1864. He published *Fifty Years' Observation of Men and Events, Civil and Military* (1884).

KEYHOLE LIMPET. A limpet of the genus *Fissurella*, a shell allied to the ordinary limpet (q.v.), but differing in that the apex is perforated, the hole being of the shape and appearance of an old-fashioned keyhole. In very young shells the apex is entire and spiral. These shells are found on nearly all coasts.

KEY ISLANDS. See KEI ISLANDS.

KEYNES, kânz, JOHN NEVILLE (1852-). An English logician and economist. He was born at Salisbury and was educated at Amersham Hall School, at University College, London, and at Pembroke College, Cambridge. Of both these colleges he was fellow and of the latter honorary fellow. From 1884 to 1911 he served as university lecturer in moral science at Cambridge, being also secretary of the local examinations and lectures syndicate (1892-1910) and chairman of the special board for moral science (1906-12). After 1893 he was secretary of the council of the university senate and after 1910 registry. He wrote *Studies and Exercises in Formal Logic* (1884; 4th ed., 1906) and *Scope and Method of Political Economy* (1891; 3d ed., 1904).

KEYNOTE. In music the fundamental note from which the key takes its name. See TONIC.

KEYPORT. A borough in Monmouth Co., N. J., 22 miles (direct) south by west of New York City, with which it has steamboat connection, on Raritan Bay and on the Central Railroad of New Jersey (Map: New Jersey, D 3). It is a summer resort and contains a public library, a high school, and Beach Park. There are manufactories of rubber goods, sewing machines, and wagons, and oyster and clam interests. The water works and sewage system are owned by the borough. Pop., 1900, 3413; 1910, 3554.

KEYS, POWER OF THE (Lat. *clavium potestas*). A theological term which denotes the supreme authority of the Church. It is prominently represented by two golden keys in the insignia of the Pope, considered as the successor of St. Peter, to whom Christ said: "I will give unto thee the keys of the kingdom of heaven" (Matt. xvi. 19). In the early fathers it usually means the authority to forgive sins. Writers on canon law generally distinguish between the *potestas ordinis* and the *potestas jurisdictionis*. The former relates to the priestly powers inherent in the clergy by virtue of their ordination, e.g., the power to offer the sacrifice of the mass. The latter relates to Church government, whether it be the care and discipline of the parish priest or the universal sway of the sovereign pontiff. In its fullness (the *plenitudo potestatis*) the power of jurisdiction, including executive, legislative, and judicial functions, resides only in the Pope, but in a more or less limited way it may be exercised by patriarchs, primates, archbishops, bishops, and priests. Constant evidence of the authority of the hierarchy is shown in the administration of discipline through the sacrament of penance.

Protestants hold a different view of the passage in the Gospel of Matthew and understand that whatever power the keys there symbolize was conferred upon the Church as a whole and is to be exercised by the ministry and laity together. It is held to include both doctrine and discipline, but not any such thing as the sacra-

ment of penance. A few modern critics think some corruption has crept into the text in Matt. xvi. 19, so that the original meaning is lost. See PENANCE; DISCIPLINE, ECCLESIASTICAL.

The position of the papacy on this is stated in Pius IX's constitution *Pastor Æternus*, published at the Vatican Council of 1870. The text, with translation, is found in Schaff, *Creeds of Christendom*, vol. ii (New York, 1877). Consult: Macedo, *De Clavibus Petri* (Rome, 1660); Hinschius, *Kirchenrecht der Katholiken und Protestanten* (6 vols., Berlin, 1869-97); Baart, *The Roman Court* (New York, 1899).

KEYSER, kî'zër. A city and the county seat of Mineral Co., W. Va., 5 miles southeast of Piedmont, on the Potomac River, and on the Baltimore and Ohio, the Western Maryland, and the Twin Mountain and Potomac railroads (Map: West Virginia, F 2). It is in a fruit and stock-raising region and has railroad machine shops, silk and woolen mills, pottery works, furniture and canning factories, and stone quarries. Keyser is a popular summer resort and contains a State preparatory school and a courthouse building. The commission form of government has been adopted. The water works are owned by the city. Pop., 1900, 2536; 1910, 3705.

KEYSER, CASSIUS JACKSON (1862-). An American mathematician and philosophical writer, born at Rawson, Ohio. He graduated from Ohio Normal University in 1883 and from the University of Missouri in 1892 and studied at the University of Michigan (1894) and at Columbia (Ph.D., 1901), where he had been tutor and instructor in mathematics since 1897. He taught five years in the public schools of Ohio and Missouri (1885-90), at the State Summer School, Kirksville, Mo. (1892), at the State Normal School, New Paltz, N. Y. (1892-94), and at Washington University, St. Louis, Mo. (1894-95). At Columbia he became professor of mathematics in 1904 and head of the department in 1910, and he taught there in the summer sessions from 1900 to 1907 and at the University of California in 1911. He became a member of the American board of the *Hibbert Journal*, and made contributions to that and other philosophical journals. In 1914 he published *Science and Religion: The Rational and the Super-Rational*.

KEYSER, EPHRAIM (1850-). An American sculptor. He was born at Baltimore, Md., and studied first at the Maryland Institute, in which he later became instructor. Then he worked at the Royal Academy in Munich and, under Albert Wolff, at Berlin. There his life-size figure of "Psyche," now in the Cincinnati Museum, won for him the silver medal of the Academy and the Michael Beerche scholarship, giving him a year's study in Rome. Among his portrait busts are those of Cardinal Gibbons, Henry Harland, Daniel Coit Gilman, and Sidney Lanier. Distinguished for imagination and strength are the memorial to Chester A. Arthur in Albany—an angel with drooping wings and sorrowful visage laying a palm branch on the sarcophagus—and the Stein Memorial in Baltimore. His bust of a man in the Peabody Institute, Baltimore, deserves especial mention for characterization and atmosphere.

KEYSER, HENDRIK CORNELISZON DE (1567-1621). A Dutch architect and sculptor, born at Utrecht. He was a pupil of Cornelius Bloemaert in his native town and then studied in Paris,

On his return he settled in Amsterdam with Bloemaert (1591) and three years afterward was appointed city architect and sculptor. His works, executed mostly in the style of the Dutch Renaissance, include the court of the East India House and the Exchange at Amsterdam, the City Hall and the monument of William of Orange at Delft, the monument of Erasmus at Rotterdam, and the front of the Osterkirk at Hoorn. In these works he was assisted by his son Pieter, and he himself erected the monument to Admiral Tromp at Delft.

KEYSER, JAKOB RUDOLF (1803-64). A Norwegian historian and philologist. He was born and educated at Christiania and in 1825 received a royal fellowship and traveled for two years in Iceland making linguistic researches. In 1828 he was made docent, and in 1837 professor of history and statistics, in the University of Christiania. His writings were on the early history of Norway and the North, especially the ecclesiastical, and he edited many of the old Norse authors. With P. A. Munch he edited, at government expense, *Norges gamle Love indtil 1380* (3 vols., 1846-49, completed by G. Storm, vol. iv, 1885, and E. Hertzberg, vol. v, 1895). His other more important works were: *Om Nordmændenes Herkomst og Folkeslegtsskab* (1839); *Nordmændenes Religionsforfatning i Hedendommen* (1847); *Den norske Kirkes Historie under Katholicismen* (1856-58); and the posthumous works, *Efterladte Skrifter* (1865-67) and *Norges Historie* (1865-70).

KEYSER, NICAISE DE (1813-87). A Belgian historical painter, born at Sandvliet, near Antwerp. He studied at the Academy of Antwerp, under Jacobs and Van Brée. He attracted attention with his first picture, "Crucifixion" (1834). The "Battle of the Spurs, 1502" (1836, Museum at Courtrai), and "Battle of Worringen, 1288" (1839, New Museum, Brussels), are distinguished for lofty conception, skill in depicting the turmoil of battle, correct drawing, and luminous coloring. They were followed by historical genre scenes, treated with subtle refinement, such as: "Emperor Maximilian Visiting Memling's Studio"; "The Giaour" and "Death of Maria de' Medici" (both 1845, and in the National Gallery, Berlin); "Columbus and his Son Leaving Barcelona" (1852); "Court of Lorenzo de' Medici" (1870); "Charles V Liberating Christian Slaves in Tunis" (1873, New Museum, Amsterdam); "Francis I in the Studio of Benvenuto Cellini" (Fodor Museum, Amsterdam). He at first modeled his style after the great masters of the Netherlands, but showed in his later period a tendency to follow the modern French school. An example of this kind is the "Massacre of the Innocents" (Museum at Ghent). He also painted good portraits and in 1864-66 adorned the staircase of the Old Museum in Antwerp with groups of Belgian artists. In 1855 he was appointed director of the Academy at Antwerp.

KEYSER, PETER DIRCK (1835-97). An American oculist. He was born in Philadelphia, of Dutch ancestry; attended Delaware College, and studied chemistry under Gentz; and served for a year as captain of volunteers in the Civil War, but was forced by poor health to resign. He spent two years at Munich, Berlin, and Jena, where he took his degree in medicine in 1864, and again entered the Federal army as assistant surgeon. At the close of the war he became connected with the Philadelphia Eye and Ear

Infirmary. He became professor of ophthalmology in the Medico-Chirurgical College of Philadelphia in 1889 and also dean of this institution. His earlier works were on chemistry, later he published *Report on Operations for Cataract* (1874) and other valuable papers in the same field.

KEYSER, THOMAS DE, wrongly called **THEODORE** or **DIRK** (c.1596-1667). A Dutch portrait painter. He was born at Amsterdam, the second son of the architect and sculptor Hendrik de Keyser. He was probably the pupil of Cornelis de Voort, but he seems to have formed his style mostly on that of Nicolas Elias. He was at the height of his reputation when Rembrandt came to Amsterdam in 1631, and exercised a decided influence upon the youthful master. Keyser's masterpiece, the Reception of Marie de' Medici," is in The Hague Museum. Other paintings by him are in the museums of Amsterdam, Berlin, Brussels, The Hague, Munich, St. Petersburg. In the National Gallery at London is a portrait of "A Merchant and his Clerk" by Keyser, which is full of human and historical as well as pictorial interest. Keyser's technique and characterization are masterful, and his lights and shadows are exquisitely suggestive of Rembrandt. His groups' genre style show portraiture at a height surpassed by Rembrandt only.

KEYSTONE. The central and crowning stone of an arch or vault, and the last to be set in place. Like the other voussours (qv), it is wider at the top than at the bottom and thus keys the entire structure. See **ARCH**.

KEYSTONE STATE. Pennsylvania. See **STATES, POPULAR NAMES OF**.

KEY WEST. A city, port of entry, and the county seat of Monroe Co., Fla., 90 miles north by east of Havana, Cuba (Map Florida, E 7). It is at the south extremity of the United States, on Key West Island, the most westerly of the group of Florida Keys. The fine deep harbor is defended by Fort Taylor, situated on an artificial island at the main entrance. There are two cities. The city is on the Florida East and on the line of a number of steamship routes to American and West Indian ports. It is a beautiful place, with broad streets, attractive houses, and tropical gardens, and its pure air and mild climate have made it a popular winter and health resort. Key West is an important United States naval station, with machine shops, dock, marine railway, marine hospital, barracks, etc. Among other features of interest are the Hargrove Institute, United States Biological Station, the high school, county courthouse and park, United States customhouse and post office, city hall, a convent, a Methodist seminary, a public library, United States Weather Bureau Station, a monument to the Maine dead, and the Eastern and Western Martello towers. The leading industry is the manufacture of cigars, which is very extensive and is carried on mostly by Cubans. Sponge fishing is also of importance, and the frequent shipwrecks on the islands offer opportunity for a profitable wrecking business. There is a considerable trade in cigars, sponges, turtles, fish, salt, fruit, vegetables, etc. The value of the exports in 1914 was \$5,000,000, while that of the imports was \$1,000,000. The island on which the city stands lies about 50 miles off the coast, but has been connected with the mainland by a railway built in part on the chain of

islets of which Key West is the terminal, and in part on a stone and concrete roadway connecting the islands. The purpose of this enterprise, on which about \$15,000,000 was expended, was to make possible the transfer of passengers and freight between Cuba and the United States by through cars to be transferred from Key West to Havana by an ocean ferry, and the through car line from New York to Havana was opened in the early part of 1915. The car ferry, which is capable of carrying 30 refrigerator cars, is pronounced the largest car ferry in existence. This enterprise of a through car line between the United States and Cuba was originated by Henry Flagler, who expended large sums of money in constructing the rail line over the ocean from the mainland to the island of Key West. Under a charter of 1893 the government is vested in a mayor, biennially elected, and a council. The water works are owned and operated by the municipality. Key West was settled in 1822, and, though unimportant for many years, it was in 1890 the largest city in the State and now ranks fourth. It was chartered as a city in 1832. Key West became of great importance to the Federal government during the Civil War and in the War with Spain in 1898 was the rendezvous of the North Atlantic squadron of the United States navy. Pop., 1900, 17,114. 1910, 19,945, 1914 (U. S. est.), 21,150.

KHABAROVSK, ká'ba-rôfsk', formerly **KHABAROVKA**, ká'bá-rôf'ká. The capital of the Maritime Province (Primorsk), Siberia, situated at the confluence of the Ussuri with the Amur. It is the seat of the Governor-General of Amur, and has a railway school, an ethnographical museum, a Chinese temple, and a public garden with a monument to Count Muravev. As a terminal of the Ussuri branch of the Trans-Siberian Railway, Khabarovsk is a place of some commercial importance and carries on a large trade in fables. The town was founded in 1858 as a military station and named after the Cossack Khabarov, one of the conquerors of eastern Siberia. It was raised to the rank of a town in 1880. Pop., 1911, 54,879, including a number of Chinese.

KHABUR, ká-boor'. A river of Asiatic Turkey. It rises among the Karajah Mountains in the Vilayet of Diarbekir, south of the sources of the Tigris, and flows for about 200 miles in a general southerly direction until it joins the Euphrates at Kerkisiah. It is identified by some authorities with the Hebrew Chabor and the Araxes of Xenophon.

KHAIBAR (kí'ber) **PASS**. Another spelling for the name of a mountain defile between India and Afghanistan. See **KHYBER PASS**.

KHAIR-ED-DIN, kí'ed-den' (better **KHAIR AL-DIN**). A Greek pirate, better known, with his brother Horuk, as Barbarossa (q.v.).

KHAKI, ká'ké (Hind. *khāki*, dusty, from *khāk*, dust). A drab, clay, or dust-colored cloth of East Indian origin, first used by the British government for their native troops and afterward for all British troops serving abroad or on campaign. For a number of years after the Spanish-American War of 1898 it was employed by the United States government for field and colonial service and similarly by both France and Germany. In the United States army the khaki uniform is now officially known as the cotton service uniform and is of a neutral olive drab rather than khaki color.

KHALID, 'ká'líd (582-642). A Mohammedan general. He was the son of Walid, of the Mahzumiyyah branch of the Kuraish. At first he was an enemy of Mohammed, being among the leaders who defeated him at Uhud in 625. But after Mohammed had married his kinswoman, Maimunah, he accepted the new faith (629) and became Mohammed's greatest general, receiving the surname Sword of Allah after his victory over the Byzantines at Muthah. He was then sent by Mohammed against Mecca and commanded the right wing of the attack. He defeated the impostor Musailima and the Banu Hanifah after the Prophet's death and in 633 was made commander of the army sent by Abu Bekr into Mesopotamia. He defeated the Persians in the Battle of the Chains, but was then ordered to join forces with Amr and Abu Ubaidah in Syria. After a forced march of five days through the waterless desert, he reached Tadmor (Palmyra). The first city in Syria that he captured was Bosra, the capital of Hauran (634). He then defeated the armies of Heraclius at Ajnadin Fihl, or Pella (635), and Emesa (635). Damascus was then besieged, and fell in August, 635. His next great battle was that of the Yarmuk (August, 636). Damascus had then to be besieged a second time, and shortly before or after it fell word came that Omar, for reasons that are not certain, had given the chief command to Abu Ubaidah. Khalid then showed his loftiness of spirit by continuing to serve as a subordinate without protest until his death, at Emesa, 642. Consult: Wellhausen, *Skizzen und Vorarbeiten*, vol. vi (Berlin, 1899), De Goeje, *Mémoire sur la conquête de la Syrie* (Leyden, 1900), A. Müller, *Der Islam*, vol. i (Berlin, 1885), Huart, *Histoire des Arabes* (Paris, 1912).

KHALIFA, kál-'fá, THE, also known as **ABDULLAH IEN SEYID MOHAMMED**, áb'dul-la'hé 'b'n sá-yéd' mò-hám'méd (c.1846-99). He was the first to assert that Mohammed Ahmed was the mahdi sent to regenerate and to deliver the Moslem world. He became the latter's chief adviser or khalifa, and on his deathbed (1885) the Mahdi proclaimed him his successor. In the 13 years of his rule he extended greatly his dominions in the Sudan. He was defeated by the British under Kitchener at Omdurman, Sept. 2, 1898, and fled to the south with the remainder of his army, which was dispersed in the battle of Om Debrikat, Nov. 24, 1899, Abdullahi himself being slain.

KHALKHAS. See **KALKAS**.

KHAMA, ká'mà (1835-). A Christianized African chief, head of the Bamangwato, a northern tribe of Bechuanaland. In 1872 he joined with Montsioa in an appeal to England against Boer encroachments. He got no immediate help, but in 1884 Bechuanaland was taken formally under British protection. In 1893 he assisted the British South Africa Company in overthrowing the power of the Matabele, and two years later he and two other chiefs visited England to protest against his country being put under that company. As a result of their protest, all the territory north of the Molopo was made a native reservation, and at Khama's request stringent laws were passed against importation of alcohol. In 1903 he founded as a new capital Serowe, Bamangwato. Consult Mrs. Wyndham Knight-Bruce, *The Story of an African Chief* (London, 1894).

KHAMI. See **HAMI**.

KHAM SIN, kām-sēn'. See **SIMOOM**.

KHAM TI, kām'tē. One of the peoples of Shan stock, dwelling on the Assam-Burmese frontier. See **SHANS**.

KHAN, kân (Pers. *khân*, prince, of Tatar origin). 1. A title of uncertain origin, often borne by Oriental rulers, especially in Central Asia. Its earliest mention is by Gregory of Tours (560), who designates the chief of the Huns (Avars) as Chagnus. Among Mohammedans it seems to have been first used in the thirteenth century at the time of the Mongol Genghis Khan, and it persisted down to the time of the last Oriental ruler of the Crimea, Shahin Giray (1783). Since the time of Bayazid I (1389) and Mohammed I (1402), the title has been added to the other titles of the Osmanli sultans. It was not used by the Seljuks (1037-1300). Khan is also joined to a personal name so as to form a composite word. In Shiite lands it means simply a man of rank, equivalent to Turkish Beg or Bey. Some of the titles compounded with Khan are: (1) Kha-Khan, used long before the twelfth century to designate the leader of the Tou-Kiou Turks, the Ouigurs, Mongols, Chinese (Yuen dynasty), and Mandshus. (2) Il-Khan (provincial khan), to indicate their inferiority to the Kha-Khans, used by the Mongol ruler Hulagu and his successors in Persia (1256-1336). (3) Tar-Khan, a subaltern prince. (4) Gur-Khan (universal lord), used by the Turks of Kara-Khitay, by Tamerlane (1335-1405), and Ulug Beg (1447). (5) Ir-Khan, used by certain Turkish tribes. The word "khanate," for the territorial divisions of Genghis Khan's empire, is a European formation. Consult De Lacouperie, *Khan, Kha-Khan, and Other Tribes* (1885).

2 The homonym "khan" (Persian *khānah*, house) is frequently applied in translations of Oriental texts and works on the East to unfurnished inns, erected either by the government or private individuals for travelers, and for whose accommodations either no charge or a small fee is required. See **CARAVANSERAI**.

KHANDESH, kân'desh, or **CANDEISH**. Formerly a district in the Central Division, Bombay, British India, now divided into Khandesh East and West. Area, 9989 (Khandesh East, 4550; Khandesh West, 5439) square miles. Pop., 1901, 1,427,382; 1911, 1,615,609. It is watered by the Tapti, and its extensive central plain fringed on the north by the Satpura Hills comprises a considerable area of fertile alluvial soil. It raises cereals, linseed, cotton, and cattle. Cotton cloth goods are manufactured. Almost surrounded by the powerful native states of Hyderabad, Sind, and Baroda, it suffered greatly during the long contest between the Mohammedans and the Mahrattas and also from the struggles among the rival chiefs. In 1818 it was taken by the East India Company. The Bhils, a . . . race, aggravated considerably the . . . of the new government. Capitals: East Khandesh, Jalgaon; West Khandesh, Dhulia.

KHANG-HI, käng'hē' Emperor of China (1662-1722). See **K'ANG-HI**.

KHANIA, kâ-né'a. See **CANEA**.

KHARBIN, kâr-bēn'. See **HARBIN**.

KHARGEH, kâr'gē, EL (full name, *Wah al-Hargah*, outer oasis). An important oasis of Egypt, situated about four days' travel west of Thebes, in lat. 25° 30' N. and long. 30° 40' E., about 220 feet above the sea and 435 miles

by rail south of Cairo (Map: Egypt, C 2). It is about 90 miles long from north to south and 3 miles wide on an average. The oasis contains the town of Khargeh (q.v.) and several villages in which antiquities may be found. The oasis does not contain a single stream, but is underlaid by sandstone rock from which water is obtained. Of late years there has been extensive boring, and portions of the surrounding desert have been reclaimed. Pop., 1907, 8348. Wheat, barley, rice, and indigo are grown. Dates are exported, the oasis containing over 60,000 palms. El Khargeh has been known since the time of Psammeticus.

KHARGEH, kâr'gā, EL, or **KHARGA**. The chief town of the oasis of the same name in Upper Egypt, situated about 100 miles west of Thebes (Map: Egypt, C 2). It contains the ruins of a temple of Ammon and several other ruins from the time of the Ptolemies and the Romans. Pop., 1907, 5362.

KHARIJITES, kâr'i-jits. See **MOHAMMEDAN SECTS**.

KHARKOV, kâr-kôf'. A government of Little Russia, bounded by the governments of Kursk and Voronezh on the north, the Province of the Don Cossacks on the east, Yekaterinoslav on the south, and Poltava on the west (Map: Russia, E 5). Area, 21,041 square miles. It has a flat surface, with a general incline towards the south. It is watered mostly by tributaries of the Dnieper and the Don. The climate is variable, but warmer than in the central part of Russia. The soil is mostly a black loam of great fertility. Cereals, including corn and buckwheat, are raised in large quantities; tobacco and the vine are also cultivated. Stock raising is an important industry, and horse breeding for the army is actively prosecuted. The chief manufactures are beet sugar, tobacco, liquors, bricks, pottery, flour, woolen goods, and iron products. The government is well provided with railway lines. Pop., 1912, 3,329,700, consisting chiefly of Little Russians. Capital, Kharkov. The territory now occupied by the Government of Kharkov was in the early Middle Ages inhabited by Khazars, Petchenegs, and later by Tatars. The Cossacks began to settle there in the seventeenth century.

KHARKOV. The capital of the Russian government of the same name, situated in a marshy district on three streams, at the junction of two railway lines, 250 miles east-southeast of Kiev (Map: Russia, E 4). It has an attractive appearance and is well built. There are a cathedral, Protestant and Roman Catholic churches, numerous Russian churches, two theatres, an exchange, and a museum. The University of Kharkov, founded in 1803, has four faculties (including jurisprudence and medicine) and nearly 1800 students, a botanical garden, and a library with 173,000 volumes. There are also a technological institute with about 1200 students, one of the four theological academies of Russia, a medical school, a veterinary institute, and a number of secondary and special schools. The city has many extensive cigar and tobacco factories, distilleries, a sugar refinery, candle works, soap works, and iron foundries. Kharkov is one of the principal commercial cities of Russia, owing to its central position with respect to the north and south trade. There are four annual fairs, at which a very large volume of business is done, especially in horses and wool. The principal imports come via the Baltic

and include mainly machinery, tea, wine, and tobacco. Pop., 1897, 173,989; 1912, 248,281. Kharkov was founded in the middle of the sixteenth century. It was the scene of revolutionary disturbances in 1905-06.

KHARPUT, kâr-pōōt', or **HARPUT**. The capital of the Vilayet of Mamuret-ül-Aziz, Asiatic Turkey. It is situated on an elevated plateau near the banks of the upper Euphrates and near the source of the Tigris (Map: Turkey in Asia, D 2). It has fine bazars, an ancient church, a Jacobite convent with a collection of valuable biblical manuscripts, a college attached to the American mission station, and a native school. The trade is chiefly in wine, cotton, and oil. The population is estimated at over 25,000 and is composed of Turks, Kurds, Armenians, and Jacobite Syrians. In 1895 it was the scene of one of the worst massacres of Armenians by the fanatical Kurds of the neighboring hills.

KHARTUM, kar-tōōm'. The capital of Anglo-Egyptian Sudan, situated on the left bank of the Blue Nile, near its confluence with the White Nile, in a treeless, sterile region (Map: Africa, H 3). It is strongly fortified and covers a large area. The present town was laid out by General Kitchener in 1908. The government buildings are European in style, and there are several mosques, a Coptic church, a hospital and barracks, a zoölogical garden, and a street railway. Gordon Memorial College and the palace of the Governor-General are new and fine buildings. As the focus of trade in Sudan, Khartum imports arms, powder, grain, and textiles, and exports ivory, ostrich feathers, and fruit. The shops of the water-transport department are situated here. Its population was estimated in 1882, before its destruction by the Mahdists, at 70,000; with suburbs (1907), 69,349. Khartum was founded by Mehemet Ali in 1822; in 1830 was made the seat of the Governor-General of Sudan and became a commercial centre. In 1885 it was taken by the Mahdi after the valiant defense by General Gordon (q.v.), who was killed in the massacre following the capture. The Mahdi's successor razed the city and made Omdurman, across the river, his capital. With the overthrowing of the power of the Mahdi by General Kitchener in 1898, Khartum was reinstated as the capital of Anglo-Egyptian Sudan and has since recovered a large part of its former trade and prosperity, especially since the railroad connecting it with Egypt has been completed. Consult: G. W. Steevens, *With Kitchener to Khartum* (7th ed., Edinburgh, 1898; new ed., New York, 1914); Bridgman, "The New British Empire in the Sudan," in *The National Geographic Magazine* (Washington, May, 1906).

KHAS, káz. One of the Gurka tribes of Nepal. Like most of their kindred, they are of mixed Hindu-Aryan and Tibeto-Mongolian blood. The Nepalese Khas are to be distinguished from the Khas of Siam and Laos, who belong to the Moïs, as one of the large groups of uncivilized or "savage" tribes of western Farther India is called. Consult Vansittart, in *Journal of the Asiatic Society of Bengal*, vol. lxi (Calcutta, 1894).

KHASI, kâ'sé, **KHASIA**, kâ'sé-á, or, as they call themselves, KYI. Inhabitants of the region of the Khasi Hills in northern Assam, eastward from the Garo tribes. The Khasi are classed by Dalton (1872) as Indo-Chinese, but independent in their linguistic affinities, pos-

sessing both monosyllabism and a species of agglutination. Ratyel (1898) considers that the Khasi are largely of Aryan blood, and Deniker (1900) thinks they approach the Indonesian type. The Khasi are among the few Indian peoples who recognize the female line. They also eschew the use of milk. Consult: Dalton, *Descriptive Ethnology of Bengal* (Calcutta, 1872); Friedrich Mueller, "Die Sprache der Khasia," in his *Grundriss der Sprachwissenschaft*, vol. ii (Vienna, 1822); H. Roberts, *Grammar of the Khasi Language* (London, 1891); Wilhelm Schmidt, "Grundzüge einer Lautlehre der Khasi-Sprache," in *Königlich Bayerische Akademie der Wissenschaften, Abhandlungen der philosophisch-philologischen Klasse*, vol. xxii (Munich, 1905).

KHASI (kâ'sé) **HILS**. See JAINTIA HILLS.

KHATMANDU, kât'mân-dōō'. The capital of Nepal (q.v.). It is situated at the confluence of the Bagmati and Vishnumati rivers, 145 miles north of Patna (Map: India, E 3). The brick or stone paved streets are narrow and dirty. The houses are from two to four stories high and have elaborately carved wood balconies and windows. There are several pagoda-shaped temples with gilt copper domes. The chief building is the Maharajan palace containing a modern durbar or reception room, and the Kot military council chamber in which Jung Bahadur disposed of his political enemies by a general massacre on Sept. 15, 1846. A British Resident is stationed at Khatmandu. The town has public schools, hospitals, and a public library. Pop (est.), 1913, 80,000.

KHAYYAM, OMAR. See OMAR KHAYYAM.

KHAZARS, kâ'zârz, **CHOZARS**, or **CHAZARS**. A people long extinct, who in the early part of the Middle Ages inhabited the region of the Caucasus and the Caspian and the steppes of southeastern Russia. When at the height of their power, in the ninth century, they held sway as far west as the Dnieper and northward to the middle Volga. They had many important cities which carried on an extensive commerce, their capital Itil (now Astrakhan) being "the Venice of the East." On the Volga they came in contact with the Bulgars, and along the Dnieper and Oka with the Slavs. By some writers they are supposed to have been an indigenous people of the Caucasus, but the warlike movements and conquests which they carried on brought in admixtures, so that the question of their ethnological position becomes a difficult one. They are usually classed with the Turk peoples, although Finno-Ugrian or Caucasian affinity is not excluded. Contemporary accounts relate that they were fair, with black hair and fine physical development, and that the women were beautiful and much sought after by the courts of Byzantium and Bagdad. As a commercial people, they possessed the good qualities of honesty and business ability, which made them successful. Their sovereigns were called Khakans (Khans). In the seventh century the Khazars were defeated by the Mohammedan caliphs, as they had been previously by the Huns (450) and the Turks; they soon recovered, however, and continued their alliance with the Byzantine Empire, helping the Greeks to stem the invasions of the Petchenegs and other barbarians. The apostle of the Slavs, Cyril, is said to have attempted their conversion without enduring results. In the eighth century their Khakan, with a part of his people, embraced Judaism.

The correspondence of the Jewish Khakan Joseph and the Spanish Rabbi Chasdai ben Shaprut (960 A.D.) has been preserved. The power of the Khazars endured only until about the beginning of the eleventh century. In 965 they suffered a defeat at the hands of the Russian ruler Sviatoslav, and about 50 years later their dominion in the Crimea came to an end. They left no literary remains.

Bibliography. Accounts of Oriental writers were published by Fraehn (St. Petersburg, 1821, 1827) and Harkavy (ib., 1874 et seq.). Consult further: Carmoly, *Itinéraires de la Terre Sainte* (Brussels, 1847); Vivien St Martin, *Sur les Khazars* (Paris, 1851); *Ibn Dasta*, translated by Chwolson (St. Petersburg, 1869); Cassel, *Der khazarische Königsbrief* (Berlin, 1877); Vambery, *Der Ursprung der Magyaren* (Leipzig, 1882); Hirschfeld, *Das Buch se-Chazari* (Breslau, 1885); Abercromby, *Pre- and Proto-historic Finns* (London, 1898); Marquart, *Osteuropäische und Ostasiatische Streifzüge* (Leipzig, 1903); Schechter, "An Unknown Khazar Document," in *Jewish Quarterly Review*, vol. iii, pp 181-219 (N. s., Philadelphia, 1913).

KHEDIVE, *ke-dév'* (Turk. *khidiv*, from Pers. *khudv*, *khudiv*, king, lord; connected with Pers. *khudāi*, God, Lord, Av. *avādāta*, self-determined, Skt *avadhā*, self-determination, from *sva*, Lat. *suus*, one's own + *dāh*, Gk. *τῆναι*, *tithēnai*, Lat. *con-dere*, to place). The title granted in 1867 by the Sultan to Ismail Pasha, the Viceroy of Egypt, and his successors, instead of the title of Vali, which all Turkish governors used. See ISMAIL PASHA; EGYPT.

KHEFREN, *kēf'rēn*. See CHEPHREN.

KHELAT, *ke-lāt'*, or **KELAT**. The capital of Baluchistan, 6780 feet above sea level and 88 miles south of Quetta (Map: Asia, Central, M 8). It is the residence of the Khan, who exercises a suzerainty, more or less nominal, over the other khans of Baluchistan. The town, situated on the slope of a hill, consists of mud houses and is surrounded by a mud wall, 30 feet high, with three gates. It is dominated by a citadel containing the Khan's palace. Its chief importance is as a centre for caravan routes to Quetta, Nushki, Gondava, and Khozdar. The town was occupied by England during the Afghan War in 1839, when Merab Khan, the ruler, was killed during the assault on the fort. In 1854 the British obtained the right of maintaining a garrison here. In 1877 a treaty was concluded with the Khan, by which a British agent, with military escort, became a resident at the court. The town has a good water supply. Its industries are small, but its bazar is the centre of a considerable domestic trade in Hindu wares and the products of the surrounding region. Pop., 14,000.

KHEMNITZER, *kēm'nits-ēr*, IVAN IVANOVITCH. A Russian writer of fables. See CHEMNITZER.

KHEPERI, *kā'pā-rē*. An Egyptian deity. See SCARABÆUS.

KHERASKOV, *kēr'a-skōf'*, MIKHAIL MATVEVITCH (1733-1807). A Russian poet. He was born in Pereyaslav, Government of Poltava, and was descended from a family of Wallachian boyars. After serving in the army he was appointed assessor of the University of Moscow upon the foundation of that institution in 1755. Here he passed the greater part of his life, becoming successively inspector of printing, director (1763), and curator (1778-1801). He edited

several journals and devoted considerable attention to pedagogy. As a poet, he has been termed the "dean of Russian literature." He displayed great versatility, his works comprising tragedies, fables, novels, and miscellaneous poems. His most celebrated production is the *Rosyada*, in 12 books, the first great Russian epic to be published. It is conceived in the style of the *Æneid* and describes the invasion of Kazan by Ivan the Terrible. The collected works of Kheraskov were published, in 12 volumes, at Moscow, in 1796.

KHERSON, *kēr-sōn'*. A government of South Russia, bounded on the north by the governments of Kiev and Poltava, on the east by Yekaterinoslav, on the south by the Black Sea, and on the west by Bessarabia and Podolia (Map: Russia, D 5). Area, over 27,337 square miles. It lies mostly in the steppe region of Russia and is practically without elevations. It is watered by the Dnieper, the Bug, and the Dniester, with their tributaries. In the north and northwest fertile stretches of black soil occur. In some parts of the government, however, the rainfall is very inadequate. Marble and granite are found in certain localities, and iron near the eastern frontier. The climate is moderate but variable. Cereals are raised mostly in the northern part, while in the south more attention is paid to the raising of domestic animals and to the cultivation of fruit. Tobacco and wine are produced to some extent. The chief industrial establishments are iron foundries, flour mills, machine works, chemical works, carriage factories, and there are considerable manufactures in wool, hemp, and leather, and agricultural machinery is produced in large quantities. Pop., 1912, 3,547,500, consisting principally of Little Russians, Moldavians, Bulgarians, Greeks, Germans, and Jews. Kherson has more German colonists than any other government in South Russia. Capital, Kherson.

KHERSON. Capital of the government of the same name in Russia, situated on the right bank of the Dnieper, about 20 miles above its mouth (Map: Russia, D 5). The river is here about 10 miles wide and contains numerous islets. The town is well built, attractive, and progressive. In the suburbs are situated the old fortifications, and the cathedral of St. Catharine, containing the remains of Prince Potemkin. The town contains a bronze statue of Potemkin and an obelisk in memory of John Howard, the English philanthropist, who died here in 1790. Kherson is an important station on the Dnieper, and its trade with Odessa is extensive, although the foreign trade is now almost entirely concentrated at Odessa and Nikolayev. The chief industries are milling, wool washing, and the manufacturing of tobacco products. The chief exports are hides, tallow, beer, flour, soap, and wool, all produced in or near the city. Kherson, founded by Prince Potemkin in 1778, was intended for a naval port and was strongly fortified. In 1787, however, the naval port was removed to Nikolayev, and the fortifications have since been abandoned. Pop., 1912, 91,858, of whom one-third are Jews.

KHEVENHÜLLER, *kā'ven-hul'lēr*, FRANZ CHRISTOPH VON (1588-1650). An Austrian statesman and diplomat, born at Klagenfurt. After a university education and extensive travel he became a prominent figure at the Imperial court, where he was a protégé of Chancellor Khlesl. (See KHLESL, MELCHIOR.) In 1616 he

obtained the important appointment of Ambassador to Madrid and there was successful in enlisting Spanish influence on behalf of Ferdinand II. He was Lord Steward to the Empress and for four years in command of a district in Croatia. He wrote, in German, an important work on contemporaneous history, the *Annales Ferdinandi* (printed entire at Leipzig, in 12 vols., in 1716-26). Consult Wolf, *Geschichtliche Bilder aus Oesterreich*, vol. i (Vienna, 1878).

KHEVSURS, kēv'sōōrz, or **CHEVSURS** (Georg., valley dwellers). One of the smaller mountain tribes of the Georgian group of peoples inhabiting the Caucasus. They are celebrated for their beer feasts. Their folk customs in general are of interest. Their religion is a mixture of paganism with Christianity and Mohammedanism. Besides the general works on the Georgians and the peoples of the Caucasus, reference may be made to Radde's monograph, *Die Chevsuren und ihr Land* (Cassel, 1878), and to the detailed account of the Chevsurs that is given in the fourth volume of Chantre's *Recherches archéologiques dans le Caucase* (Lyons, 1885-87).

KHINGAN, kīn-gīn'. A range of mountains between Mongolia and Manchuria, in the northeastern part of China. It begins at the southeastern corner of the Desert of Gobi, being an extension of the long chain which crosses that desert from East Turkestan (Map China, L 2 and 3). It skirts the desert on the east and extends northward through eastern Mongolia and western Manchuria to the Amur River. It reaches a height of about 7500 feet and contains a number of volcanic peaks. This chain is generally called the Great Khingan, and it is connected by forest-covered plateaus intersected by river valleys with the Little Khingan, a group of mountains south of the Amur in northeastern Manchuria, which region is now tapped by the Trans-Siberian Railway. The two mountain ranges were carefully explored and surveyed in 1887-88 and 1897.

KHIVA, kē'vā. A vassal state of Russia, in Central Asia, situated approximately between lat 40° and 44° N and long. 58° and 62° E. (Map: Asia, Central, J 2). It is bounded by the Aral Sea on the north, Russian Turkestan and Bokhara on the east, and the Russian Transcaspian Province on the south and west. Its area is estimated at about 26,000 square miles. With the exception of the portion adjoining the Amu, which flows along the eastern border, the country is occupied by sandy desert interspersed with a number of small oases. The territory depends for its water entirely on the Amu, from which a number of canals extend into the interior and are used for irrigation. The climate, although unpleasant, is healthful. The heat in the summer is very great, and the winters are short but severe. The rainfall is scanty, and during the autumn great quantities of sand are blown by the wind from the surrounding desert. In the portions of the country accessible to irrigation rice, wheat, and other cereals, cotton, melons, and fruit are cultivated. Domestic animals include horses, camels, and sheep; wild animals, the jackal, the wolf, and the fox. Agriculture and the raising of live stock are the chief occupations of the natives, who are partly nomadic.

Khiva is governed by a khan whose rule is hereditary and restrained in its absolutism by Russia. The foreign relations of the khanate

have been under the practical control of Russia since 1873. The population of Khiva is estimated at 800,000, including 400,000 nomads. The inhabitants belong to the Aryan races and are composed mainly of Karakalpaks, Turkomans, and Kirghizes. The Uzbeks are the ruling race and are engaged chiefly in agriculture. The Sarts and Tajiks, supposed by some to be the original settlers of the country, inhabit the cities, where they engage in trade and handicraft. The chief towns are Khiva (q.v.), the capital; New Urgenj; Kiptchak; and Kungrad.

History. Khiva in ancient times and in the early Middle Ages formed part successively of the kingdoms of Bactria, Parthia, and Persia, and of the caliphate. The modern Khanate of Khiva is a fragment of the independent kingdom known in history under the three different names of Chorasania, Khwarezm, and Urgenj, which rose into power at the close of the eleventh century under a Seljuk dynasty and conquered and held in subjection Persia and Afghanistan. This kingdom controlled the Oxus or Amu, the most important river of Central Asia. It was swept into his great dragnet of conquest by Genghis Khan in 1221, and in 1372 it came into the hands of Timur. Timur's descendants were subdued in 1511 by Shahy Beg (called Sheibani Khan by Western writers), chief of the Uzbeks, a Turkish tribe, and his successors have ruled over Khiva to the present time. Ever since the seventeenth century, when its wealth excited the cupidity of the first Cossack raiders into Central Asia, the Russian government recognized the importance of Khiva and as a pretext for attempts at conquest complained that the Khivans fostered rebellion among the Kirghiz subjects of the Czar and plundered their caravans. In 1717 Peter the Great endeavored to conquer Khiva, but was defeated, and in 1839 the attempt was renewed by the Czar Nicholas I, but with no better success. With the advance of Russia in Central Asia, and the establishment of Russian power in the Transcaspian country, a cordon was slowly drawn about Khiva, and in 1873 a great effort was made to crush it. Three Russian columns advanced on Khiva from the Caspian, from Orenburg, and from Tashkent. The second and third, under Generals Verekin and Kaufmann, entered the city in May and June. The Khan agreed to pay a war indemnity of about \$11,000,000 (which is gradually being liquidated by the payment of yearly installments), and to cede to Bokhara the Khivan possessions on the right bank of the Amu. Shortly afterward, however, these possessions controlling the mouth of the Amu were incorporated with Russian territory, and now form the Russian District of Amu. Khiva, on the left bank, retains its autonomy nominally; but with Russia as a heavy creditor and established in full control of the surrounding country, it is practically a vassal state. In 1910 Seyid Asfendiār Khan (?1871-) succeeded his father, Seyid Mohamed Rahim Khan, as reigning sovereign.

Bibliography. Khanikov, "Les documents sur le khanat de Khiva," in *Bulletin de la Société Géographique* (Paris, 1873), with bibliography; MacGahan, *Campaigning on the Oxus, and the Fall of Khiva* (London, 1874); Lansdell, *Russian Central Asia* (ib., 1885); Moser, *A travers l'Asie Centrale* (Paris, 1886); Colquhoun, *Russia against India* (New York, 1900);

S. Goulitchambaroff, *Khwa* (Askhabad, 1913), in Russian.

KHIVA. The capital of the khanate of the same name, situated on a canal near the Amu, 240 miles west-northwest of Bokhara (Map: Asia, Central, J 2). It is surrounded by a wall and is made up mostly of flat-roofed huts. On an eminence in the centre of the town is situated the citadel, containing the palace of the Khan. There are 17 mosques and four Mohammedan colleges. The industries are the making of carpets, silks, and cottons. Pop. (est.), 6000.

KHLESL, klá's'l (spelled also KLESEL), METCHIOB (1552-1630) An Austrian prelate, born in Vienna. Although Protestant by education, he entered the Roman church and rose through successive dignities to be Bishop of Vienna (1602) and Cardinal (1615). He also became Chancellor to the Archduke Matthias, upon whose accession to the throne of the Empire his power, already formidable, was greatly increased. He induced him to turn against the Emperor Rudolph. When in 1618, however, he counseled Ferdinand II and the latter's ally, Maximilian, Duke of Bavaria, to desist from war with the Bohemians, he was imprisoned at Castle Ambras in the Tirol. Summoned to Rome (1622) for trial before the Curia, he was there acquitted. Ferdinand later acquiesced in the decision of the church, and in 1627 Khlesl returned to Austria. His extensive and valuable correspondence, edited by Hammer-Purgstall in the form of an autobiographic study, appeared at Vienna in 1847-51 (4 vols.). Consult Kerschbaumer, *Kardinal Klesel* (Vienna, 1865).

KHLYSTI, or **KHLISTI**, klis-tí' (Russ., lasher). A Russian fanatical sect which originated about the middle of the seventeenth century. One Daniel Philipovitch, a renegade soldier, was the founder, and from him the sect is sometimes called Danielites. Philipovitch wandered about the country, declaring that he was God and preaching certain commandments. He adopted a son, who thenceforth was considered Jesus Christ, the Son of God, and a young girl was chosen as the virgin mother of God. The sect spread and still secretly exists, notwithstanding attempts to suppress it. The commandments of Philipovitch inculcated moral duties, including celibacy and abstinence from strong drink. Nevertheless the Khlysti are charged with indulging in immoral practices and revolting orgies. They meet at night in secret and become wrought up to a high pitch of fanatical excitement. It is a part of their discipline to weaken the flesh and strengthen the spirit, accordingly they fast often and flog one another at their meetings. They call one another Saviour, Redeemer, Christ, and Mother of God, and pray to each other as to gods. Many have been sent to Siberia and the Caucasus. Consult Heard, *The Russian Church and Russian Dissent* (London, 1887).

KHMELNITSKI, BOGDAN. See CHMIELNICKI, BOGDAN.

KHMELNITSKY, kmél-nít'skí, or **CHMELNITSKI**, NIKOLAI IVANOVITCH (1789-1845). A Russian writer of comedies in verse, born at St. Petersburg. He was first in the military service, taking part in the campaign of 1812-13, and afterward was Governor of Smolensk in 1829 and of Archangel in 1837, but retired the following year. His earliest literary attempts were metrical translations of Molière's *Tartuffe* and *L'Ecole des femmes*. Simple plots, natural

characters, and easy-flowing verses characterize his plays entitled *Vozdushnye zamki* (Castles in Spain), *Russkii Faust* (The Russian Faust), *Govorun* (The Prattler), and others. His comedy *Tsarkoe Slovo* (The Word of the Czar) was successful, and he wrote another historical drama called *Bogdan Chmielnicki*. His complete works were published at St. Petersburg (1849).

KHMERs, k'mérz. The primitive inhabitants of Cambodia. They are now to be found chiefly in the marshy regions of the south and the neighboring parts of Siam and Cochinchina, but were probably at an early period spread over a great portion of southeastern Farther India. Their physical affinities have been the subject of much discussion, likewise their linguistic relationship. Brinton (1890) calls them "a mixed people, descended partly from Mongolian ancestry, partly from Dravidian and Aryan conquerors"; Keane (1896) speaks of their language as having "Oceanic (Malayo-Polynesian) affinities"; Deniker (1900) thinks that the Khmers "have sprung from the intermixing of the Malays and Kuis, with an infusion of Hindu blood at least in the higher classes of society." The Khmers seem to be somewhat taller, less broad-headed, and darker skinned than the Annamese, Siamese, etc. Their eyes are seldom typically Mongolian, and their hair is often wavy rather than straight. Though a people in some respects of quite a primitive type, they are undoubtedly the originators of the generally majestic and simple basic principles of the architecture seen in the remarkable ruins of pyramids, temples, palaces, etc., of Angkor-Vat and elsewhere in the Khmer area. The original Khmer ideal has, however, been lightened by Indian influences, and perhaps other stimuli have also contributed to make the change from the first conception. Some of these ruins date from about the beginning of the Christian era, but the most beautiful probably belong to the period 700-1400 A.D. Some authorities seem inclined to attribute too little influence to the Khmers in the construction of these wonderful monuments, considering them almost entirely of foreign origin. It would be better, perhaps, to regard some of their peculiarities as due to different flowerings of Khmer art at diverse periods of the national history rather than as borrowings from outside. The modern Khmers who have behind them these evidences of former civilizations are too readily stigmatized by certain writers as mere "degenerate descendants" of their cultured ancestors, preserving only in metal smithing some recollections of their old-time glories. Probably both the genius of the creators of the Khmer ruins and the "degeneracy" of their successors have been exaggerated.

Bibliography. Besides the general works on Cambodia, Cochinchina, Siam, etc., by Aymonier, Moura, Garnier, Lemire, etc., the following more special treatises may be referred to: Aymonier, *Textes Khmers*, etc. (Paris, 1878-91); Fournereau and Porcher, *Les ruines d'Angkor* (ib., 1890); Fournereau, *Le Siam ancien* (ib., 1895); Léon Barré, "De l'influence française au royaume des Khmers, étude historique, économique, et politique du Cambodge, ancien et moderne," in *Annales de la Société d'Emulation du Département du Vosges*, vol. lxxviii (ib., 1902); A. Combanaire, "Etude sur les peuples préhistoriques du Cambodge et de la région d'Angkor," in *Bulletin de la Société des Etudes indo-chinoises de Saigon*, No. lvii (Saigon,

1909). A *Khmer-French Dictionary* was published by Aymonier (ib., 1878). See CAMBODIA; INDO-CHINESE.

KHNOFFF, knöpf, FERNAND (1858-). A Belgian painter, sculptor, and etcher. He was born at Grembergen, near Termonde (West Flanders), and passed his youth at Bruges. After studying law for a time, he devoted himself to painting under Xavier Mellery at the Brussels Academy and under Lefebvre in Paris. He was strongly influenced by Gustave Moreau, Alfred Stevens, and the English Pre-Raphaelites. His art is essentially modern, and his favorite subjects are mysterious and dreamy interpretations of the past or subtly conceived allegorical female figures, full of harmonious beauty, but lacking in vigor and freshness. His portraits also deserve special mention. Among his best-known works, many of which are in private possession, are "The Crisis" (1881); "The Temptation of St. Anthony" (1883); "Memories" (1889), Brussels Museum; "I Lock my Door upon Myself" (1891), Munich Pinakothek, "White, Black, and Gold" (1901), Brussels Museum, "The Idea of Justice" (1905), "Isolde" (1906). Consult Dumont-Wilden, *Fernand Khnopff* (Brussels, 1907).

KHNUM, k'nōm, or **CHNUM**. An Egyptian deity, worshiped especially in the vicinity of the first cataract of the Nile, where he is usually associated with the goddesses Satet and Anuket, worshiped in the same district. His worship, however, was supreme from Thebes to Philæ. His name was connected by the priests with a stem (*khn*) signifying 'to form, fashion,' and in many Egyptian texts he is styled the creator of gods and men. He is one of the oldest Egyptian gods and is often depicted officiating at the birth of kings, and forming the newborn child upon a potter's wheel. In fact, "the oldest endowment [says Steindorff] of the kind about which we know anything is one dedicated by the primitive King Zoser to the patron of the Cataract district of Assuan, the god Khnum." His sacred animal was the ram, and he is generally represented in human form, with the head and horns of a ram. In later times Chnum was regarded as a cosmical divinity. Consult: Franz Wiedemann, *Religion of the Ancient Egyptians* (New York, 1897), E. A. T. W. Budge, *The Gods of the Egyptians* (London, 1904), Georg Steindorff, *The Religion of the Ancient Egyptians* (New York, 1905). See PLATE of EGYPTIAN DEITIES.

KHODAVENDIKYAR, kō'dā-vēn-dē-kyār', or BRUSA (Map. Turkey in Asia, A 2). A vilayet of Asiatic Turkey, occupying the northwest portion of Asia Minor, with an area of about 26,000 square miles, comprising portions of ancient Phrygia and Bithynia. It has a fertile soil and some manufactures, and its population is estimated at over 1,700,000, of whom a little more than 300,000 are Armenians. The capital is Brusa (q.v.).

KHODJEND, kō-jēnt', or **KHOJEND**. The capital of a district of the same name in the Territory of Samarkand, Asiatic Russia, on the Central Asiatic Railway, about 93 miles south of Tashkent (Map: Asia, Central, N 2). Gardening, vine growing, and the manufacture of coarse porcelain, silk and cotton goods are carried on. There is a brisk trade in leather, cotton, and raisins. Pop., 1897, 30,109; 1912, 39,977. Khodjend, the ancient Kyropolis, is one of the most ancient cities of Central Asia;

Alexander the Great sojourned here for a time. It became Russian in 1866.

KHOL, koi. A town in the Province of Azerbaijan, Persia, situated about 75 miles northwest of Tabriz, on the caravan route between that city and Erzerum (Map: Persia, A 3). It lies in a fertile and well-cultivated region, 3300 feet above the sea. The old wall incloses a city of wide and regular streets shaded by trees and intersected by several canals. It has several good buildings, including the Governor's residence and mosques. The bazars are built of brick and well stocked, and the town has a large caravanserai. Pop. (est.), 25,000, including a number of Armenians.

KHOIKHOIN, k'hoi'k'hoim'. See HOTTENTOTS. **KHOJEND**, kō-jēnt'. A city of Asiatic Russia. See KHODJEND.

KHOKAND, kō-kānt'. A territory of Turkestan. See FERGHANA.

KHOKAND. The capital of a district in the Territory of Ferghana, Asiatic Russia, and former capital of the Khanate of Khokand (Map: Asia, J 4). It is situated on a small stream about 8 miles south of the Syr Darya, on the Central Asiatic Railway. It is surrounded by thick walls and is for the most part built in the Oriental fashion. The European portion is more regularly laid out. Khokand is the seat of a considerable transit trade in Russian manufactures, especially in cotton goods, and representatives of the great Russian dry-goods houses come each year to attend the fair in the middle of August. Pop., 1897, 81,354, 1912, 113,764.

KHOLM, kōlm (Pol. *Chelm*). The capital of a district of the same name in the Government of Lublin, Russian Poland, about 45 miles east of Lublin. It has a fine cathedral, an old castle, a theological and a teachers' seminary, and a railway school, and is a grain and cattle market. Pop., 1897, 19,236, 1912, 27,251.

KHOLMOGORY, kōl'mō-gō'rē. The capital of a district of the same name in the Government of Archangel, European Russia, situated 47 miles southeast of Archangel, on an island of the northern Dvina (Map: Russia, F 2). It was of some commercial importance in the palmy days of the White Sea trade, but is now in a state of decline. Peter the Great, on his return from his travels, brought to Kholmogory several specimens of the Dutch breed of cattle, by means of which the natives so improved their own that the Kholmogory breed is now considered one of the best in Russia and is well known abroad. From 1743 to 1746 it was the home of the former Regent, Princess Anna Leopoldowna, who was held here as a prisoner. The "father of Russian literature," Lomonosoff, was born in the little village Denisovka, in the vicinity of the town. Pop., 1912, 1053.

KHOMYAKOV, kō'myā-kōf', ALEKSEY STEPANOVITCH (1804-60). A Russian poet and publicist, born in Moscow. After serving in the Turkish campaign of 1828-29 he retired to devote himself to literature. In 1832 appeared his tragedy in verse, *Yermak*, followed by another, *Pseudo-Demetrius* (1833); they are inferior to his lyric *Poems*, which were published in 1844. Strongly imaginative, felicitous in diction, he is "drunk with patriotism." To him Russia is the ideal country of the world. In his historical, philosophical, and theological works he endeavored to prove that "the rotten West" (Romano-Germanic world) had come to

yield its place in history to the Panslavic world, with Russia in the lead. These Panslavic ("Slavophile") ideas were embodied in *A Message from Moscow to the Servians* (Leipzig, 1860). He wrote in Russian, French, German, and English. His collected works appeared in Moscow (1861) in four volumes.

KHONDS, k'hōndz, or Kus. A Dravidian people who inhabit part of Orissa and the adjacent regions of Bengal and number more than half a million, but have never reached civilization like the Tamils, Telugus, Kanarese, Malayalam, etc. Physically the Khonds are below the average in stature, somewhat darker than their neighbors, comparatively well built and well muscled, and have always been in more or less demand as soldiers. They are credited with great hospitality, sense of honor, morality above the average, etc. They were formerly noted for their sacrifices of human beings to the earth deity, and their capture marriage, of which now only the shadow remains. Among them all the great religions of India, besides missionary Christianity, have obtained a hold, while the older heathenism is still a force to be reckoned with. They are a very interesting type of the primitive, as contrasted with the civilized, Dravidian. Captain Campbell, who learned to know them well during a long residence in their country, has, in his *A Personal Narrative of Thirteen Years' Service among the Wild Tribes of Khondistan* (London, 1864), given a good account of this people. For information of an anthropological and ethnological sort, consult also: Lewin, *Wild Races of Southeastern India* (London, 1870); Dalton, *Descriptive Ethnology of Bengal* (Calcutta, 1872); Rowney, *The Wild Tribes of India* (London, 1882); Reclus, *Primitive Folk* (New York, 1891).

KHONS, kōnz, or **KHONSU**. See CHONS.

KHOPA, kōpa. A seaport in Asiatic Turkey, in the Vilayet of Trebizond, and about 90 miles northeast of the city of Trebizond. In the European War, which began in 1914, Russian warships bombarded the port and destroyed the port barracks and the ammunition depot and set the town on fire. The Turks were preparing for an offensive movement from Khopa. See **WAR IN EUROPE**.

KHORASAN, kō'rā-sān' (the land of the sun). A northeastern province of Persia, bordering on the Russian Transcasian Territory on the northeast and Afghanistan on the east (Map: Asia, Central, F, G, H, 5). Area, estimated at 150,000 square miles. A large portion of it consists of the deserts of Lut in the south and Kavir in the west, interspersed with numerous oases. The agricultural land is situated chiefly in the northern part. The climate is, on the whole, temperate and healthful, but the scarcity of water makes agriculture impossible without artificial irrigation. Grain, cereals, cotton, tobacco, opium, and southern fruits are cultivated to some extent, and cattle are raised. In the cities the manufacturing of silk and woolen materials, cotton goods and Persian-lamb garments, carpets, shawls, and arms is pursued. Pop. (est.), 1,000,000, consisting of numerous nomadic tribes of Turkish, Kurdish, and Afghan descent, whose chief occupation is grazing. The trade has hitherto been carried chiefly by the road which leads from Meshed, the capital of the province, to the Caspian Sea, by way of Astrabad. In ancient times Khorasan consisted of the districts of Parthia, Margiana,

and Aria, forming parts of the Persian (later of the Parthian) Empire. Up to the sixteenth century the name covered also the Territory of Herat, now belonging to Afghanistan. Khorasan has been several times separated from the Persian Empire, but was finally reunited to it at the commencement of the sixteenth century by Ismail Sofi, the first Saffavian Shah of Persia. Consult: Macgregor, *Journey through Khorassan* (London, 1879); Radde, "Wissenschaftliche Ergebnisse," in *Petermanns Mitteilungen*, vol. cxxvi (Gotha, 1898); Tate, *Khurasan and Sistan* (London, 1900).

KHORSABAD, kōr'sā-bād'. A mound and village in the territory of ancient Assyria, about five hours northeast of the modern Mosul. The town whose ruins constituted the mound was in reality a suburb of Nineveh. Excavations at Khorsabad were begun in 1843 by Paul Botta (q.v.), after three months' work at Kuyunjik (see **NINEVEH**), with results which he considered unsatisfactory. At the new location he immediately brought to light important remains, his success marking the beginning of discoveries in Assyria. Supported by the French government, Botta continued his work through 1844 and uncovered portions of a large palace. In 1851-55 Victor Place, also at the expense of the French government, completed the examination of this palace, discovered that it had formed part of a fortified town, and determined the position and extent of the town walls. Records which were found showed that the palace had been built by Sargon II (722-705 B.C.), after whom the town was named Dūr-Sharrukin (Sargon's fortress). The town was nearly square, about a mile on each side, the angles of the walls being directed towards the four points of the compass. Eight gates were discovered, three of them very elaborate, flanked by winged bulls and other sculptures, while the arches were decorated with blue and white enameled tiles representing various figures of excellent design and execution. The palace stood on a terrace 45 feet high, at the northwest side of the town, a considerable portion of it extending without the wall (For full description of the palace and for a plate, see **ASSYRIAN ART**). Most of the sculptures and other works of art from Khorsabad are now in the Louvre, although unfortunately many of the antiquities discovered by Place were lost while being transported down the Tigris. Consult: Botta and Flandin, *Monument de Ninive* (5 vols., Paris, 1849-50); Joachim Ménant, *Inscriptions des revers de plaques du palais de Khorsabad traduites sur le texte assyrien* (ib., 1865); Place and Thomas, *Ninive et l'Assyrie* (3 vols., ib., 1866-69), and the works mentioned under **NINEVEH** (q.v.).

KHOSRU, kōs-rō' (Av. *Husravah*, having good renown). 1. The name of a legendary King of Persia, known as Kai Khosru. (See **KAIANIAN**.) 2. The name of the Sassanian King of Persia commonly called Khosru I, or, more accurately, Khusrāu. Surnamed Anushirvan (the noble soul), and known to Byzantine history as Chosroes I, he was the third son of Kobad, or Kavadh, King of Persia, and was the greatest monarch of the Sassanian dynasty. In 531 A.D. Khosru mounted the throne, according to the terms of his father's will. The young King is said to have put to death his elder brother, who had been excluded from the succession and had therefore conspired against him. In 540 Khosru reopened the standing

feud between the Persians and the Byzantines, and hostilities continued for 20 years. Although the Persians reaped an abundant harvest of glory, the other results were unimportant. On the accession of Justin II the Persian ambassadors were ignominiously treated, and the Greeks took possession of Armenia. Khosru, justly indignant again declared war in 570 and took Dara, the eastern bulwark of the Greek Empire, but was terribly defeated at Melitene (577) by Justinian, grandnephew of the Emperor of that name. The victorious Greek was in his turn totally routed in Armenia. Khosru did not live to see the end of the contest, as he died in 579. His government, though despotic and occasionally oppressive, was marked by a firmness and energy rarely seen among Orientals. Early in his reign he divided the country into the four provinces of Assyria, Media, Persia, and Bactriana, administering the government of each by a viceroy. Agriculture, commerce, and science were encouraged, ravaged provinces were repopled from his conquests, and wasted cities rebuilt. His memory was long cherished by the Persians, and many a story of the stern justice of Khosru is still current among them. During his reign Persia stretched from the Red Sea to the Indus and from the Arabian Sea far into Central Asia. Consult, in addition to the histories of the period, such as Rawlinson, Eduard Meyer, and others, Justi, in *Grundriss der iranischen Philologie*, vol. ii (Strassburg, 1896-1904).

KHOSRU II. King of Persia from 590 to 628. Surnamed **PARVEZ** (the Victorious). He was the grandson of Khosru I. He overthrew in 590, with the help of the Byzantine Emperor Maurice, the Armenian rebel Bahram Chubin, who had usurped the throne of the young prince's father, Ormazd IV. In gratitude he surrendered Dara, Nisibis, and a great part of Armenia to the Greeks, and preserved peace with them till the murder of his benefactor by Phocas in 602. Khosru invaded Mesopotamia in 604, took Dara, and for 17 years inflicted upon the Byzantines a series of disasters the like of which they had never before experienced. Syria was conquered in 611, Palestine in 614, Egypt and Asia Minor in 616, and the last bulwark of the capital, Chalcedon, fell soon after. At this crisis the fortune of war changed sides (See **HERACLIUS**). Khosru was driven to the very gates of Ctesiphon. He was deposed, and murdered by his eldest son, Sheroe, or Siroes, Feb. 28, 628. Consult Justi, in *Grundriss der iranischen Philologie*, vol. ii (Strassburg, 1896-1904).

KHOTAN, kô-tân', or **ILCHI**. A city in the southern part of East Turkestan, China, situated on the Khotan-Darya, in a fertile oasis on the edge of the great desert of the Tarim Basin, at an elevation of 4600 feet, and on one of the most important trade routes of Central Asia (Map: Asia, J 5). It is an ill-built but extensive place, fortified with Oriental ramparts; it has an important silk industry and exports gold and musk. Khotan is famous for its silk carpets. The silk is mixed with wool and gold thread, and patterns are handed down from father to son. It was formerly the capital of a khanate of the same name. The population is estimated at 30,000 to 40,000, mostly Uzbek Tatars. The country around Khotan was once full of flourishing cities, now buried in the desert sands. Explorations have been made in

the Khotan District by Sven Hedin in 1895 and 1900 and M. A. Stein in 1900-01. Consult: M. A. Stein, *Sand-Buried Ruins of Khotan* (London, 1903); id., *Ruins of Desert Cathay* (2 vols., ib., 1912).

KHOTIN, kô'tyén, or **CHOTIN**. The capital of the district of the same name in the Government of Bessarabia, Russia, situated on the right bank of the Dniester, a few miles from the Austro-Hungarian frontier (Map: Russia, C 5). It is of little commercial importance. The inhabitants are engaged chiefly in agriculture. Pop., 1912, 19,561. Here John Sobieski defeated the Turks in 1673.

KHUBILAI KHAN. See **KUBLAI KHAN**.

KHUEN-BELASI-HEDÉRVÁRY, KAROLY (CHARLES), COUNT (1849-1914). A Hungarian statesman, born at Freiwaldau in Upper Silesia. He entered the Hungarian House of Deputies in 1875 as a Liberal. In 1882 he became Obergespan, or Count, of Raab (Győr) and in the next year was made Governor of Croatia, where his 20-year rule was marked by some minor reforms and by a steadily growing hostility to him. In 1903, upon the resignation of Szell, the crown, in spite of Hedervary's unpopularity, made him Premier of Hungary (June 26). The powerful Opposition did not keep its pledges made to him when he formed his cabinet, and the army question forced his resignation (November 3). From March, 1904, to June, 1905, he was a Minister in Tisza's cabinet. Becoming Hungarian Minister President again on Jan. 17, 1910, he prorogued the House for eight weeks when it voted no confidence (January 24) and dissolved it on March 22. The newly elected Parliament had an administration majority, but the Independent minority blocked all business, and when the throne objected to his compromise over the army question Hedervary offered his resignation, on March 6, 1912, but kept the post of First Minister when Francis Joseph threatened to abdicate. On April 17, 1912, he finally had to resign.

KHUFU, kôo'fôo. The Egyptian form of the name Cheops (q.v.), the second King of the fourth Egyptian dynasty.

KHURJA, kôo'r'já. A town in the District of Bulandshahr, United Provinces, India, near the East Indian Railway (Map: India, C 3). It lies 50 miles south-southeast of Delhi. It is one of the centres of India's cotton trade and exports grain, indigo, sugar, and ghi. Pop., 1901, 29,277; 1911, 27,387.

KHUZISTAN, kôo'zê-stân', or **ARABISTAN**. A western province of Persia, bounded by the provinces of Luristan and Ispahan on the north, Farsistan on the east, the Persian Gulf on the south, and Asiatic Turkey on the west (Map: Persia, F, G, 6). Area, estimated at 39,000 square miles. The western part is low and swampy in the winter. The eastern is hilly and has a more healthful climate. The chief rivers are the Karun and the Kerkhah. The province is very sparsely settled and has declined greatly in trade since the famine of 1873. Pop. (est.), 200,000, largely Arabs. In the elevated portions of the east are raised rice, wheat, barley, maize, cotton, fruit, and indigo. Carpets, cotton, woolen, and silk goods are manufactured. The climate is hot and unhealthy. The chief cities are Dizful, Shuster, and Mohammerah.

KHALYNSK, kvá-lînsk'. The capital of a district of the same name in the Government

of Saratov, Russia, situated on the right bank of the Volga, 140 miles northeast of the city of Saratov (Map: Russia, G 4). Gardening, distilling, and trading in grain are the principal occupations. Pop., 1897, 15,465; 1912, 20,100, including 5000 Raskolniki and other Dissenters, in whose hands the trade of the town is concentrated.

KHVOSHCHINSKAYA, kvôsh'chín-skâ-yâ, NADEZHDA DMITRIEVNA (1825-89) A prominent Russian author, born at Ryazan in the Province of Ryazan. A very precocious child, she was sent to Moscow to study art and literature. In 1847 six of her poems appeared in the *Literary Gazette*, and with these she made her début as a writer. Her first serious piece of work, the novel *Anna Mukhaïlovna*, appeared three years later. In 1852 her *Country Teacher*, another novel, proved equally successful. She wrote under the pseudonym of V. Krestovsky and sometimes under that of Poriechnikov, most of her work first appearing in *Annals of the Fatherland*, a monthly magazine. Her keen observation and realistic manner found great favor with the Russian public, in particular in her studies of provincial life, of which the most important is *The Great Bear* (1871). Among her other publications are *In Trust of Better Things* (1861) and *From the Immediate Past* (1868). Several volumes of her work have been translated into German and Italian. Her collected works appeared at St. Petersburg (1883; in 5 vols., 1892). A most recent study of this important novelist in Russian will be found in Koltonovskaya, *Feminine Silhouettes* (St. Petersburg, 1912).

KHYBER, kî'bër, or **KHAIBAR**, PASS. A narrow defile in the Khyber Mountains, northwest India, connecting Punjab with Afghanistan (Map: Afghanistan, O 5), between Peshawar and Kabul. It is 33 miles long and in some parts is merely a ravine from 50 to 450 feet wide, between overhanging mountains and almost perpendicular cliffs of shale and limestone rising from 1400 to over 3000 feet high. It forms the bed of a mountain stream which is subject to occasional and sudden floods and to periods during which the water disappears altogether. Impressive in its desolation, wildness, and grandeur, it is the only pass in the region through which artillery can be transported. Its strategic importance dates from the days of Alexander the Great. The ruins of native forts crown commanding points, and during the Afghan wars of 1839-42 and 1878-80 the passage of the British troops was obstinately opposed. Since the latter period the pass has been under the control of the Anglo-Indian government, which maintains several fortified posts garrisoned by the Khaibar Rifles, a corps of native Afridis. The pass is open to traffic on Tuesdays and Fridays only.

KHYENS, kyênz. See CHINS.

KIABOUCCA, **KIABOOCA**, **KYABUCA**, kî'â-bôók'kâ, or AMBOYNA WOOD. A beautifully mottled wood which reaches the market in small pieces, curled knots or excrescences formed on the stem of the producing tree. The mottling is yellowish red, of different tints mixed with darker shades. It was much used for snuff-boxes and other kinds of ornamental cabinet-work. The exact botanical origin of this handsome wood is in question. It is probably produced by a number of allied species and is chiefly exported from New Guinea and Moluc-

cas. A number of species supposed to furnish this wood, as *Pterospermum acerifolium*, *Pterospermum rubiginosum*, and *Pterospermum suberifolium*, occur abundantly in India, where their timber is considered very valuable.

KIAKHTA, kâ'âk'tâ. A trading station in the Territory of Transbaikalia, Siberia, situated close to the Chinese commercial settlement of Maimatchin, and nearly 3 miles north of the fortress of Troitsko-zavsk, of which it forms a part (Map: Asia, M 3). It is surrounded by a wooden wall and has a fine cathedral and an extensive bazar. The commercial importance of Kiakhta is still considerable, although it has greatly declined since the Treaty of Peking in 1860, prior to which it was the chief centre of the trade between Russia and China. The trade consists almost entirely in the export of tea, and there is a brisk trade in other Chinese produce. Money was first used in the trade of Kiakhta in 1855. Pop., 23,400, including the adjacent towns of Troitsko-zavsk and Ust-Kiakhta.

KIA-K'ING, kyâ'k'êng', or **CHIA-CH'ING**, chyâ'ch'êng' (high felicity). The fifth Emperor of the *Ta Tsung* (great pure), the Manchu dynasty of China. He was the fifteenth son of K'ien-lung (q.v.) and succeeded him in 1796. National decay set in with his accession to the throne. He proved dissolute and worthless, and family feuds, plots, insurrections, and piracy taxed the resources of the country. He persecuted the Romish missionaries and expelled many of them. Secret societies became very active in his reign, especially the White Lily; also the Triad Society, whose sole aim was the overthrow of the Manchus. In 1816 a British embassy under Lord Amherst arrived, but failed to accomplish anything. Kia-k'ing died in 1820, after a reign of 25 years, and was succeeded by his son Tao-kuang, then already 40 years of age. Consult: Giles, *China and the Manchus* (Cambridge, 1912).

KIAMIL (kyâ'mél') **PASHA** (1826-1913). A Turkish statesman, born in the island of Cyprus. He studied in the military academy at Cairo, accompanied an Egyptian prince on a European tour, and served as interpreter at the Viceroy's palace. After the death of Khedive Mehemet Ali (1849), Kiamil Pasha went to Constantinople, where he entered government service and rose rapidly. After becoming Grand Vizier in 1885, he endeavored to treat non-Moslem subjects with fairness and to pacify the Great Powers; but in 1891 Sultan Abdul Hamid, startled by Kiamil Pasha's programme of reforms, dismissed him in disgrace. A second time Grand Vizier in 1898, his recommendation of repression and punishment of the outrages inflicted upon Armenians resulted in a short time in his being sent away, as Governor, to Aleppo. Thence he was transferred to a like post at Smyrna. After the revolution of 1908 he again held his former high office until he failed to gain the support of the reform committee, and in 1912, just before the Balkan War, he became Grand Vizier for the fourth time. On Jan. 23, 1913, he was again, and this time effectually, overthrown by the coup d'état of Talaat Bey and Enver Bey. He was allowed to retire to Cyprus, where he died.

KIANG, ki-âng'. The Asiatic wild ass, better designated tarpan. Its local varieties have also received separate names, as gorkhar, etc. See ASS, and Plate of EQUIDÆ.

KIANGANES, kē-āng'an, or **QUIANGANES**. See IFUGAO

KIANGSI, kyāng'sŭ'. An inland province of China, bounded on the east by Chekiang and Fukien, on the south by Kwangtung, on the west by Hunan, on the north by Hupeh, and on the northeast by Anhui (Map: China, L 6). It is made up entirely of ranges of moderately high mountains and hills of no great length, veined by numerous watercourses and small stretches of open country. On its outer border, east, south, and west, the ridges are longer and higher and form a sort of horseshoe-shaped environment, the Poyang Lake filling the opening on the north. In this frame of mountains most of the numerous rivers of the province have their origin, and from this they drain either directly into the lake or join the Kan-kiang, the principal stream of which rises in the Meiling Mountains in the south and after a course of over 300 miles flows into the Yang-tse through the lake. This forms the great water highway from north to south, a single day's portage over the Meiling bringing the traveler to the North River of Canton, which leads to that city and the China Sea. The province is rich in minerals. Coal is found not far from the lake, and about 30 miles south of the city of Kwangsin, in what are called the Interdicted Hills, are valuable copper and iron mines. Under Imperial China these mines were closed as far back as the fifteenth century. Kaolin and other materials needed for pottery and porcelain making are abundant and support the famous chinaware industry of this province (See KINGTEHCHEN). The chief products of the province are tea, tobacco, grass cloth, hemp, chinaware, and paper. There is one treaty port, Kiukiang (q.v.). Principal imports are cotton yarn, kerosene, and sugar, principal exports, tea, porcelain, cotton, hemp, paper, and tobacco. Kiangsi has played an important part in literature. The capital is Nanchang. Area, 69,498 square miles; pop. (Chinese Michengpu census), 1910, 16,255,000.

KIANGSU, kyāng'sŭ'. A maritime province of China, lying along the Yellow Sea, with Shantung on the north, Chekiang on the south, and Anhui on the west (Map: China, L 5). It is a great alluvial plain, broken only by isolated hills, and is well watered, being intersected by numerous waterways and the largest chain of lakes in China. The Yang-tse traverses its southern part, cutting it in two, and until 1853, when it suddenly changed its course to the northeast, the Yellow River intersected its northern part. The Grand Canal, which is a series of canalized rivers and lakes, runs through its entire length from Shantung to Chekiang, and is important for irrigation purposes and for local transportation. The southern section is watered by the Hwang-pu, which teems with Shanghai's commerce. The soil is very fertile, and produces grain of all kinds, cotton, tea, and silk. Rice is grown extensively. The silk produced in Kiangsu is the finest in the world, and the rice of the best quality in China. The salt industry is also important. The old bed of the Yellow River has been resurveyed and taxed, and is now under cultivation and produces immense crops.

There are four treaty ports: Nanking, Shanghai, Chinkiang, Soochow. Nanking is the capital of the province. Under the Manchu rule, a Governor-General (or "Viceroy") administered

the provinces of Kiangsu, Kiangsi, and Anhui. Nanking (q.v.), officially called Kiangning ("River Rest"), was the capital of China at different periods and as late as 1402. Chinkiang was opened in 1861 and has a considerable trade, a total in 1912 of Hk. Tls. 21,556,504. Shanghai (q.v.), on the Hwang-pu, is the most important of the treaty ports of China. Soochow (or Suchow, q.v.) was opened in 1896, and is famed for its wealth. Yangchow, situated on the Grand Canal, 15 miles from the Yang-tse, has an immense salt trade. The entire province was devastated by the Taiping rebellion, marks of which can still be seen. Area, 38,600 square miles. population estimated by census of 1910 at 15,380,000.

KIAOCHOW, kyā'ō-chou', or **KIAOCHAU**. A walled city on the south coast of the peninsula of Shantung, China, near the head of a large bay of the same name, and since 1898 the centre of a German protectorate of about 193 square miles (Map: China, M 4). Pop., including Kiaochow, which lies outside the German zone, about 168,000. In the city of Tsingtau is a population of 34,000, and in the whole German zone about 60,000, with 5000 foreigners, mainly German military. The Chinese city of Kiaochow was formerly a very important centre of trade, but, owing to the silting up of the bay and the opening of Chefoo on the north coast of the province, business has fallen off. The city is not large, but the suburbs are extensive. The port of Kiaochow was Taputu, 13 miles from the sea and about 6 miles from the city, on a small creek which at ebb tide became dry. The surrounding country (with the exception of Laoshan) is flat. The Bay of Kiaochow measures about 15 miles each way, and receives five small streams which carry into the bay much sediment during the rainy season, in July and August. The entrance to the bay is only 1¼ miles wide. On the east side is the low promontory called Laoshan, with rocky shores, and 2 miles from the point of this peninsula lies the town of Tsingtau, "green island," so named from a small grassy island close by. On the western side of the bay is another promontory, with commanding hills about 600 feet high. The east shore has a fine sandy beach, but the western side is rocky and dangerous to some extent.

The city of Tsingtau has one of the finest harbors on the Chinese coast. It was the seat of the German commercial activities in the Far East and the capital of the German zone. In 1897 it was a poor fishing village, but when taken over by the Germans was soon changed into a beautiful, thriving city. They bought the village outright, and installed fine wide streets with German names, electric lighting, telephone service, and other conveniences, including two German banks, the Hongkong and Shanghai Banking Corporation, the Russo-Asiatic Bank, and several good hotels. Industrial concerns include a brewery, a tannery, a soap factory, two eggs-products companies, and three brickkilns. In 1911 there were 18,000,000 bricks used in construction, and, in 1912, 393 building permits were issued. A new and expensive water supply was completed. Tsingtau has a splendid bathing beach and is the favorite summer resort for the Shanghai foreign colony. The maximum temperature is about 90° F. and the minimum 12°. Active efforts have been made at afforestation.

By an expenditure of over \$7,000,000 the Germans constructed an outer and an inner harbor. Considerable dredging was necessary to make the port a naval base. There are two anchorages and three moles, connecting with the railway, also an outer breakwater and extensive granite piers. A steel floating drydock, capable of accommodating the largest battleship, employs 36 Europeans and an average of 1300 Chinese workmen. In 1912 the gross value of the trade amounted to \$40,557,759, an increase of \$6,846,893 over 1911. Direct trade with foreign countries amounted to \$18,700,000, as against \$15,120,000 in 1911. Exports of native produce equaled \$17,999,539. Main foreign commerce, 1912:

	Imports from	Exports to
United States	\$1,332,114	\$34,375
Germany	2,047,497	1,880,221
Japan	4,882,069	656,774
Great Britain	268,915	351,553

Imports are chiefly cotton manufactures, oil from the United States, Russia, and Sumatra, timber, railway material, matches, and tobacco. Exports consist mainly of bean cake, coal, eggs (a large quantity to the United States), nuts, silk, straw braid (of which the Germans have the monopoly for north China), and cotton. In 1912 there were 785 ships entering Tsingtau, with a net tonnage of 1,209,151; German ships numbered 256, with 516,066 net tonnage, British 209, with 448,093, and Japanese 176, with 144,478 net tonnage. Because of the commercial importance of Tsingtau and its efficient government, many wealthy merchants and officials have taken up their residence in the city.

The administration prior to the War in Europe was under a naval officer with the title of Governor, assisted by a council composed of heads of departments, and three elected members. Tsingtau was declared a free port in 1898. In 1906 the Chinese Maritime Customs was established there, under an agreement that 20 per cent of the customs revenues were to be turned over to the German administration. There were no barrier dues (*likin*), and passengers and goods were allowed to pass freely between the German zone and the interior, without any customs regulations or restrictions.

The railway runs from Tsingtau, where it has fine terminal stations, through Shantung Province to Tsinan. By tapping the lower valley of the Hoang-ho River the road greatly increased the possibilities of German trade with interior China. Ten to 20 miles south of Weihien are the Shantung coal mines, in which Germany received preferential rights by treaty. In 1912 the two leading mining companies produced 573,676 tons of coal. In the same year the railroad showed a 17 per cent increase in returns and a 35 per cent increase in passengers.

For defense, Tsingtau was considered superior to Port Arthur. The hills which dominate the city in the rear are from 200 to 1000 feet high, while those commanding the harbor are 600 feet in height. At strategic points were a dozen modern reinforced concrete and sandstone forts, mounted with the heaviest type of Krupp guns, of 14 and 16 inches' calibre, with a range of 10 to 12 miles. These forts are of an interlocking character, each one commanded by at least two others. They completely dominated every approach to the city by land or sea. Be-

cause of its excellent defensive advantages, Tsingtau ranked as one of the strongest fortified places in the world. It was also the naval base for the German Far Eastern squadron.

On Nov. 14, 1897, Kiaochow was seized by a German squadron as retaliation for the murder of two German priests. In the negotiations which followed, Germany received an indemnity, a lease of the city of Tsingtau and Kiaochow Bay for 99 years (the lease running 100 li inland, comprising about 117 square miles), and in addition, valuable railway rights and preferential treatment in the mines of Shantung. German influence became paramount in the entire province. The main purpose of Germany in securing Tsingtau was to establish a strong naval base in Chinese waters, also to have a centre for the spread of German commerce and influence in the Far East. Because of the thoroughness of the German commercial methods, together with the fact that millions of marks were spent in rebuilding Tsingtau and establishing an efficient government, the expectations of Germany were amply realized. In the European War, which began in 1914, Japan compelled Germany to evacuate the protectorate after an investment by land and sea. The Germans made an heroic resistance. The bombardment of the port of Tsingtau lasted almost four months, and it was not until all the fortifications were entirely destroyed that the garrison surrendered. See TSINGTAU, WAR IN EUROPE.

KIBDELOPHANE. See ILMENTE

KIBLAH, kē'blā (Ar *Kiblah*, the direction to which one turns) The direction of the Kaaba (q.v.), in Mecca, towards which Mohammedans face when in prayer. It is indicated in a mosque by a niche in the wall called the *mihrab*. At the outset of his career Mohammed is said to have turned towards the Kaaba when praying, though this is contrary to Sura ii, 110: "The east and the west is God's; therefore whichever way ye turn is the face of God." After his flight to Medina the Prophet changed the direction of prayer towards Jerusalem in the hope of attracting the Jews. On Jan. 16, 624, the futility of this hope, he changed it back again to the Kaaba, justifying this momentous change by a special revelation (Sura ii, 136-145). Consult: Sprenger, *Das Leben und die Lehre des Mohammed*, vol. iii (Berlin, 1869); Grimme, *Mohammed* (München, 1904); Becker, "Islam," in *Die Religion in Geschichte und Gegenwart* (Tübingen, 1912).

KIBO. See KILIMANJARO.

KICHAI, kē'cht. A small tribe of Caddoan stock (q.v.), formerly residing on Sabine and Trinity rivers, eastern Texas, in alliance with the Caddo, but since 1850 more closely united with the Wichita (q.v.), with whom they are now living on their reservation in Oklahoma. In house-building and general custom they resemble the Wichita. They now number 10 souls.

KICHÉ, kē-chā'. See QUICHÉ.

KICKAPOO. A former important Algonquian tribe, residing, when first known to the French, in central Wisconsin. On the destruction of the Illinois Confederacy by the northern tribes subsequent to 1765 the Kickapoo moved down and established themselves in the middle Wabash region of Illinois and Indiana. Like the other tribes of the Ohio valley, they sided with the English against the Americans, both in the Revolution and the War of 1812.

Soon after the close of the latter war they made treaties which resulted in their removal first to Missouri and afterward to Kansas. About the year 1852 a large band, with some Potawatami, left the main body and went south to Texas and thence into Mexico, where they became known as Mexican Kickapoo, being joined later by others of their tribe. The Mexican band proved so constant a source of annoyance to the border settlements that efforts were made by the government to secure their return, and were so far successful that in 1873 about half were brought back and settled in the present Oklahoma. Most of the others still remain in northern Chihuahua and Tamaulipas, particularly in the Santa Rosa Mountains. From an estimated population of about 3000 in 1759 and 2200 in 1825 they have gone down to perhaps 900, of which 348 are in Kansas (Brown County) and Oklahoma and the remainder in Mexico. Those in Mexico are said to be increasing, while those who were returned to Oklahoma have decreased. Consult F. W. Hodge, *Handbook of American Indians North of Mexico* (Washington, 1907).

KICKHAM, kik'am, CHARLES JOSEPH (1826-82). An Irish novelist of Irish life, and, after Carleton, Griffin, and the Banims, perhaps the best of his kind. He was born at Mullinahone, County Tipperary. A gunpowder accident which damaged his sight and hearing made his intended medical career impossible. He played an active part in the Young Ireland movement in 1848 and was sentenced to 14 years' imprisonment as a treasonable Fenian in 1865, four years of which sentence he served before being pardoned out. With John O'Leary and T. C. Luby he edited (1865) the Fenian newspaper, *The Irish People*. From 1870 he devoted himself to literary work and is best known by the novels, of some tragic power, *Sally Cavanagh, or the Untenanted Graves* (1869), which he wrote in prison; *Knocknagow, or the Homes of Tipperary* (1879); and *For the Old Land: A Tale of Twenty Years Ago* (1886). Gifts of observation, of humor, and of romantic feeling were his, and, under circumstances more favorable to the development of his talents, he might have rivaled William Carleton as a faithful and sympathetic delineator of peasant life.

KIDD, BENJAMIN (1858-). An English sociologist. He entered the British civil service and did not become generally known until the publication of a brilliant essay, *Social Evolution*, in 1894. This work passed through several editions and was translated into German (1895), Swedish (1895), French (1896), Russian (1897), Italian (1898), Chinese (1899), Czech (1900), Danish (1900), and Arabic (1913). The main theme of *Social Evolution* is the conflict between private interest and social welfare, the struggle which eliminates the unfit being the condition of progress. Kidd held that society should be interpreted in terms of biology. He weakened his thesis, however, by finding that men were ultimately controlled by the extrarational motives supplied by religion, which furnished the basis for individual self-sacrifice for the benefit of the public welfare. His later books include: *Control of the Tropics* (1898); *Principles of Western Civilization* (1902; Spanish trans., 1903); *Herbert Spencer and After* (1908); *Two Principal Laws of Sociology* (1909).

KIDD, JOHN (1775-1851). An English physician and geologist, born in London. He was

educated at Bury St. Edmunds and Westminster, and at Christ Church, Oxford (B.A., 1797; M.D., 1804), and at Guy's Hospital. At Oxford he was a reader in chemistry in 1801-03, first Aldrichian professor of chemistry in 1803-22, and thereafter regius professor of medicine. In 1834 Kidd was appointed keeper of the Radcliffe Library. In addition to his regular courses he lectured also on mineralogy and geology and actively promoted the development of those sciences. He is author of *Outlines of Mineralogy* (2 vols., 1809); *A Geological Essay on the Imperfect Evidence in Support of a Theory of the Earth* (1815); *On the Adaptation of External Nature to the Physical Condition of Man* (1833, new ed., 1836); *Observations on Medical Reform* (1841); *Further Observations* (1842).

KIDD, WILLIAM (c.1650-1701). A British navigator, the notorious Captain Kidd of piratical fame. The son of a Scottish Nonconformist minister, he was born probably at Greenock, Scotland, about 1650. He went to sea at an early age, became a trader out of New York, and in the war between England and France, in the early part of the reign of William III, commanded a commissioned vessel in the West Indies and was noted for his bravery. In 1691 the Council of New York awarded him £150 for services rendered the Colony. In 1695, upon the recommendation of Col. Robert Livingston, he was appointed by the Earl of Bellomont, Governor of the Province of New York, to assist in suppressing piracy, and received two commissions from the King, one as a privateer against the French, and the other a roving commission to pursue and capture pirates wherever he might find them. He sailed from Plymouth, England, April, 1696, in a galley called the *Adventure*, carrying 30 guns and a crew of 80 men. After proceeding to New York he increased his crew to 155 men and sailed for Madeira, thence to St. Jago, Madagascar, Malabar, and the Red Sea. He had not been very successful in capturing vessels, and rumors arrived that he had turned pirate. According to evidence amassed he first took some small Moorish vessels, then fought a Portuguese man-of-war, which defeated him, and finally captured a Portuguese ship from Bengal, and an Armenian vessel, the *Quedagh Merchant*, with a rich cargo. At Madagascar he burned his vessel and went on board the Armenian, afterward purchasing the sloop *Antomo* and sailing in company. Proceeding to New York, he coasted from Delaware Bay to Block Island, corresponding with the Earl of Bellomont in the meantime. He had learned that he had been proclaimed a pirate and boldly went to Boston to know the truth, delivering up to the Governor 1111 ounces of gold, 2353 ounces of silver, 57 bags of sugar, 41 bales of goods, and 17 pieces of canvas acquired by his captures. On July 6, 1699, however, in accordance with the British proclamation, Kidd was arrested, the immediate charge against him being that of murder, he having killed a gunner on board the *Adventure* who had become mutinous. He was sent to England, and in April, 1700, was tried, and, although the evidence was inconclusive and the proceedings marked by injustice, was found guilty of murder and, on five separate indictments, of piracy. Kidd was allowed no counsel, and his explanations were ignored. He was condemned and hanged with several of his companions at Execution Dock, London, on May 23,

1701, protesting his innocence to the last. After Kidd's death it became rumored about that he and his crew had buried immense treasures prior to his capture, and the coast of the United States from Block Island south, and even islands in the Hudson River, have many times been searched fruitlessly for this rumored wealth. He had buried part of the *Quedagh Merchant's* treasure on Gardiner's Island off Montauk Point, L. I., but this was recovered by the Colonial authorities in 1699. Consult Campbell, *An Historical Sketch of Robin Hood and Captain Kidd* (New York, 1853), and Dalton, *The Real Captain Kidd: A Vindication* (ib., 1911).

KIDDER, DANIEL PARRISH (1815-92). An American Methodist Episcopal theologian and writer, born at Darien, Genesee Co., N. Y. He graduated from Wesleyan University in 1836, entered the ministry, and in 1837 went as a missionary to Brazil, where he was probably the first to preach a Protestant sermon. After his return to the United States, in 1840, he served as secretary of the Methodist Sunday-school publications and tracts (1844-56), as professor of homiletics in Garrett Biblical Institute for 15 years and in Drew Theological Seminary for 10 years, and as secretary of the board of education of his church (1880-87). The rest of his life was spent in Evanston, Ill. His *Treatise on Homiletics* (1864, 1884) and *The Christian Pastorate* (1871) are the books by which he is now best known. Others include: *Mormonism and the Mormons* (1844), *Sketches of Residence and Travel in Brazil* (2 vols, 1845); *Brazil and the Brazilians Portrayed in Historical and Descriptive Sketches* (8th ed., 1868).

KIDDER, FREDERIC (1804-85). An American author and antiquarian. He was born in New Ipswich, N. H., was mainly self-educated, and engaged in various business ventures in Boston and New York. As the result of special researches into the history of early New England times and families, he wrote on such subjects as *The History of New Ipswich, a New Hampshire Town* (1852); *The Expeditions of Captain John Lovewell* (1865); *Military Operations in Eastern Maine and Nova Scotia during the Revolution* (1867); *History of the First New Hampshire Regiment in the War of the Revolution* (1868); and *History of the Boston Massacre* (1870).

KIDDER, KATHRYN (Mrs. L. K. ANSPACHER) (1868-). An American actress, born at Newark, N. J. She studied dramatic art in New York, London, and Paris, made her debut as an actress at Chicago in 1885, and later appeared in *Davy Crockett*, *Nordeck*, and *Little Lord Fauntleroy*. After 1894 she starred continuously in old English comedies, in Shakespearean tragedies, and in French dramas. Her earliest success was in Sardou's *Madame Sans-Gêne*, of which she obtained exclusive performing rights in the United States and Canada, in any language except French. She also played in *Molly Pitcher* (1902); *Salammbô* (1904); *The Embarrassment of Riches* (1906); *A Woman of Impulse* (1909); *The Glass House* (1911); *The Washerwoman Duchess* (1912), a version of *Madame Sans-Gêne*.

KIDDERMINSTER. A manufacturing town in Worcestershire, England, on the Stour, 14 miles north of Worcester (Map: England, D 4). The Stafford and Worcester Canal opens com-

munication with Liverpool, Bristol, and Hull. Kidderminster is noted for its carpet manufactures, established in 1735; there are also worsted-spinning mills, tin-plate and dye works, and breweries. Richard Baxter, the Nonconformist preacher, and Rowland Hill, the sponsor of penny postage, were born here. The town owns its water supply, markets, free library, baths and washhouses, cemetery, and sewage farm. The United States is represented by a consular agent. Kidderminster dates from the Conquest and was incorporated in 1636. Pop., 1901, 24,681, 1911, 24,333.

KIDDERMINSTER, or INGRAIN, CARPET. See CARPETS AND RUGS

KIDERLEN-WAECHTER, kē'dēr-lēn-vēk'tēr, ALFRED VON (1852-1912). A German statesman, born at Stuttgart. Between 1872 and 1876 he studied law at Tübingen, Leipzig, and Strassburg. He served as secretary or counselor of the German embassies in St. Petersburg, Paris, and Constantinople until 1886, and after 1888 accompanied the Emperor on many of his journeys. In 1895 he was appointed Minister at Copenhagen and in 1900 Minister at Bucharest, where he made himself thoroughly informed in Balkan affairs. On several occasions he had charge of the embassy at Constantinople. When Baron von Schoen was ill in 1908, Kiderlen-Wächter was summoned to the foreign office to deal with the Casablanca incident and to prepare the Franco-German Treaty of 1909. These negotiations were carried on with the French Ambassador, Jules Cambon, by whom, it was considered by many, he was outplayed; and Kiderlen-Wächter was largely blamed for the Agadir coup. Appointed Secretary of State in 1910, he largely succeeded in rebuilding his diplomatic reputation within the two years before his death.

KIDNAPING (from *kidnap*, originally slang, from *kid*, slang for child + *nap*, variant of *nab*). The offense of wrongfully taking and conveying away a person against his will, either by force, fraud, or intimidation, or of detaining him with intent to do so. As the origin of the word indicates, it was originally applied only to the abduction of children, but very early in the English law it was employed to designate the same offense in regard to adults. Blackstone, in his *Commentaries*, defines it as "the forcible abduction or stealing away of a man, woman, or child from their own country, and sending them into another." The term is used in a broader sense in the common law of to-day, and, if a person is taken out of his way for any distance in his own country or locality, the person so constraining him is guilty of the crime.

In nearly all of the United States the crime is defined and regulated by statute to-day. Merely enticing a competent adult person away is not sufficient to constitute the crime. There must be an abduction against his will, either actually or constructively. For example, inducing a laborer to go to a far-away island to work, by holding out extravagant promises which the employer does not intend to fulfill, does not come within the scope of this crime; but getting a sailor intoxicated and taking him aboard a strange ship, with design to detain him until the vessel was under way, and then to persuade or coerce him to serve as a seaman, has been held to constitute kidnaping. The crime is also committed if the consent to such

removal and concealment is induced by 'fraud, or if the victim is legally incompetent to give a valid consent, as in case of a child of tender years or a feeble-minded person. The essential elements of kidnaping and of false imprisonment are about the same, except that the former includes, in addition to a detention, the act or intention of carrying away the victim to another place, usually for the purpose of avoiding discovery. Many of the United States have materially increased their statutory penalties for the crime, and the penalty now varies from 10 to 25 years' imprisonment.

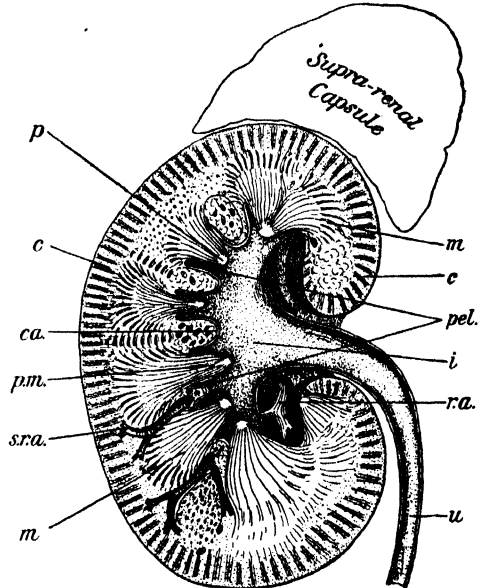
Of course, if one person has a legal right to the custody of the person of another, he may detain or take him away to any place in his discretion, within the proper limits, even though the person thus subject to his control objects. Where two persons have equal rights to the custody of the person of another, it is not culpable for one surreptitiously to take the dependent person from the other. Thus, where husband and wife have separated without a legal decree, one may take their children from the other by any peaceable means, even though it be by trick or deception.

The laws of the United States make it a felony to kidnap a person in another country and bring him or her here to hold in confinement or for involuntary service or for any immoral purpose. The term "abduction" as a legal offense is usually restricted to the kidnaping of a woman for the purpose of marriage or sexual intercourse. See ABDUCTION; FALSE IMPRISONMENT; SLAVERY. Consult the authorities referred to under CRIMINAL LAW.

KIDNAPPED. A novel by Robert Louis Stevenson (1886). The story, laid in 1751, gives the adventures of David Balfour, who was kidnaped by his uncle and shipped to America to be sold.

KIDNEY. One of a pair of glands found in the body of every vertebrate (and represented by a similar organ in many invertebrates), whose function is to elaborate and eliminate urine and thereby excrete waste organic products of destroyed tissue and nutritive changes. In the human being the kidneys are placed in the back part of the abdominal cavity, behind the peritoneum, embedded in fat which, together with their blood vessels, keeps them in position. One is situated on each side of the spinal column, extending from about the eleventh rib to the neighborhood of the crest of the ilium. Above each one is the pyramidal supra-renal capsule (q.v.). The kidney is of the shape of a plump Lima bean, with a concave notch at one side, the hilum. It is of a dark-red color, firm, dense, but somewhat brittle. It is a little over 4 inches long, about 2 inches wide, and 1 inch thick, and varies in weight from 4 to 6 ounces, the female kidney being slightly smaller than the male. The organ is covered by a thin but tough fibrous envelope (*tunica propria*). The hilum leads down into a cavity, the sinus, in which lie the renal vessels, nerves, and duct. The duct is continuous with the ureter (which is the canal which conveys the urine into the bladder) and enlarges to become the pelvis of the kidney. The pelvis is funnel-shaped, with the edges of the large end attached to the margin of the sinus, thence turning inward and investing the sheaths of the vessels. The pelvis divides and then subdivides, the primary segments of the duct being called calices.

On longitudinal section, the kidney is seen to be composed of two principal portions: the external portion, or cortex, and the more central portion, or medulla. The medulla consists of from 8 to 18 conical segments called the pyramids of Malpighi, the apices of which (the papillæ) project into the bottom of the sinus and are encircled by the calices, and the bases of which are directed outward towards the surface and are contiguous to the cortex. Each pyramid is about $\frac{3}{4}$ of an inch high and about $\frac{2}{3}$ of an inch across the base, smooth in section, and marked with striæ running from base to apex which mark the course of the uriniferous tubules. The cortex consists of a peripheral layer,



KIDNEY.

c., cortex; m., medulla; p.m., pyramid of Malpighi; p., a papilla; ca., the calyx; pel., pelvis; i., the infundibulum; r.a., renal artery; s.r.a., small branch of the renal artery; u., ureter.

and several processes (columns of Bertini) which pass down between the pyramids of the medulla and reach the sinus. The cortex is somewhat granular, owing to the presence of a number of very small pyramidal groups of tubules, the pyramids of Ferrein. The tubules that carry the urine begin by a number of spherical capsules in the cortex. From each capsule a narrow tubule passes which becomes wide and convoluted, narrows again as it doubles upon itself and returns, after running down into the subjacent Malpighian pyramid. The narrow loop is called the tube of Henle. It thus runs into the cortex, where it becomes again wide and convoluted, and finally opens into a straight tube which forms the axis of a pyramid of Ferrein. The straight collecting tubes run into the Malpighian pyramids, uniting and forming large trunks which terminate in openings in the papillæ of the pyramids, thus emptying their contents into the calices.

The kidney is well supplied with blood vessels. The arteries pass from the point at which they enter the organ at the bottom of the sinus, running up between the Malpighian pyramids and subdividing at their bases in cortico-medullary arches. These arches, lying between cortex

large irregular cells, and is known as the second or distal convoluted tubule. After a more or less tortuous course in the cortical pyramid the tubule again enters a medullary ray and joins with other similar tubules to form what is known as a collecting tubule. This tubule is lined with cuboidal epithelium and passes down through medulla and papilla to open into the pelvis of the kidney. The larger of these tubules situated in the papilla are called the ducts of Bellini. The different portions of the uriniferous tubules are thus seen to make up the structure of the kidney, being held together and supported by a very small amount of connective tissue. The cortical pyramids are seen to be formed by the glomeruli and the first and second convoluted tubules, the medullary rays by the ascending arms of Henle's loops and the collecting tubules, the medulla by the ascending and descending arms of Henle's loop, by the loops themselves, and by the collecting tubules, the papilla by the ducts of Bellini. These uriniferous tubules constitute the so-called parenchyma, or functioning part of the kidney, while the connective tissue which supports them is known as the interstitial part of the kidney.

Blood Vessels of the Kidney. Blood reaches the kidney through the renal artery, which enters the hilum and breaks up into several large branches. These branches pass up between the ducts of Bellini to the junction of medulla and cortex. Here they form a series of arches known as the renal arches. From these are given off two sets of branches. One set, the interlobular cortical arteries, pass upward to the cortex, forming a capillary network among the convoluted tubules and in the glomeruli. The other, known as the arteriæ rectæ, pass downward into the medulla, where they form a capillary network among the tubules of the medulla. From the cortical capillary network blood enters the interlobular vein, whence it is carried to the veins of the renal arches. From the medullary capillaries blood enters the venæ rectæ and thence goes to the veins of the renal arches. The lymphatics of the kidney consist of two sets of vessels—a superficial set which ramify in the deeper layers of the capsule, and a deeper set which accompany the blood vessels into the interior of the organ and communicate with the lymph spaces of the intertubular connective tissue. The nerves of the kidney belong to the sympathetic system and are mainly of the non-medullated variety. They pass in between the tubules, where they form a fine network.

KIDNEY, DISEASES OF THE. See BRIGHT'S DISEASE, CALCULUS, PYELITIS. The surgery of the kidney includes nephrectomy, or removal for tumor; nephrotomy, or section for removal of a calculus, nephrorrhaphy, or suturing the kidney fast in cases of movable kidney, and decapsulation. See SURGERY. Consult Da Costa, *Modern Surgery* (7th ed., Philadelphia, 1914).

KIDNEY BEAN (so called from the shape). The common kidney bean (*Phaseolus vulgaris*) is the haricot of the French. In Great Britain it is sometimes called French bean. See BEAN; DOLICHOS, and Plate of LEGUMINOSÆ.

KIDNEY VETCH (*Anthyllis*). A genus of perennial, somewhat shrubby herbs of the family Leguminosæ, valuable for forage and attractive for their spikes or heads of yellow-white or purple flowers and delicate foliage. The plants are propagated by seeds and are of easiest culture and succeed in even poor soil. In

the United States they have not become popular in any capacity.

KIDO, kē'dō, TAKAYOSHI (1832-77). A Japanese statesman, "The Pen of the Revolution of 1868," born at Hagi, in the Province of Choshu, about 1832. His father was a physician. When Commodore Perry's expedition arrived in Japan in 1854, he disguised himself as a laborer and served as porter to carry the instruments and baggage of the surveying parties, in order to penetrate the secret of the strength of Western nations. In 1868 he joined the revolutionary party, and with Iwakura, Okubo, and Saigō (qq.v.) he planned and executed the coup d'état of January, 1868, which gave the coalition of southwestern clans possession of the Imperial palace of Kyoto and the person of the Mikado. (See KEIKI.) He was the author of a famous state document, the address to the throne, which secured the abolition of the feudal system and the relinquishment by 270 daimyos of their lands and income to the Mikado. Recognizing the newspaper press as a potent element in civilization, he founded in 1868, at his own expense, the first regular newspaper, called the *Shimbun Zasshi*. In 1873 he was Vice Ambassador with Iwakura in the embassy round the world. He caused the translation and publication in Japanese, in eight volumes, of Montesquieu's great work, *L'Esprit des lois*, the reading of which by the educated classes in Japan ripened public sentiment for the constitution of 1889. Returning to Japan, he secured the formation of an assembly of local rulers, was made a Privy Councilor of the Emperor, and was in attendance upon the Mikado until his death in Kyoto, May 27, 1877. He was a man of preëminent political genius, stainless life, and gentle manners. At the promulgation of the constitution his abilities were recognized in posthumous honors and in the elevation of his son to the nobility.

KID'RON (Heb. *Kidrôn*). A valley east of Jerusalem, the modern Wady Sitti Maryam (valley of the Lady Mary), also called Wady Silwan (the valley of Siloah) (Map: Palestine, B 1). It begins north of the city at the foot of Mount Scopus, continues south towards the city, then takes a bend eastward, extends between Jerusalem and the Mount of Olives, and may be said to terminate south of the city at En Rogel, though the depression proceeds under the name of Wady el-Nar southeast towards the Dead Sea. The valley is now dry, but in ancient times there was a brook in it, and the true bed of the stream was found 38½ feet below the present channel in 1868. The following year an aqueduct cut through the rock was discovered, and in 1880 an inscription giving an account of the construction of the channel. (See SILOAM.) The Kidron is first referred to in 2 Sam. xv. 23, where David in fleeing from Absalom is said to have crossed it. In 1 Kings ii. 37, Shimei is forbidden by Absalom to cross Kidron. Some scholars have drawn the inference, from the fact that Shimei fled in the direction of Gath, that Kidron was the name of some part of the western ravine. But the text is probably corrupt and should be read "by any road" instead of "the brook Kidron." According to 1 Kings xv. 13, 2 Chron. xv. 16, Asa burned at Kidron the idol which his mother had set up; according to 2 Kings xxiii. 4, 6, 12, Josiah burned at Kidron the *asherah* that had been in the temple (See ASHERA.) The account in 2 Chron. xxix. 16, xxx. 14, of Heze-

kiah's casting into the Kidron the altars that were found in Jerusalem and the abominations of the temple is hardly historical. The popular name Valley of Jehoshaphat dates back to the fourth century A.D. It appears in the *Onomasticon* of Eusebius (272, 89) and in the *Onomasticon* of Jerome (145, 13). It is based upon Joel iii. 1-12, but the identification is manifestly incorrect. (See JEHOSEPHAT, VALLEY OF.) The belief that this valley will be the scene of the last judgment (see JUDGMENT, FINAL) has led both Jews and Mohammedans to make of it a burial ground, and its slopes are covered with tombs. The Jews have used especially the eastern side towards the Mount of Olives, while the Mohammedans are buried on the west towards the Temple. According to John xviii. 1, just before the betrayal Jesus went forth with His disciples across the ravine Kidron, "where was a garden."

Bibliography. Tobler, *Die Siloahquelle und der Oelberg* (Berlin, 1852); Robinson, *Biblical Researches in Palestine* (New York, 1857); Warren and Conder, *Jerusalem* (London, 1884); Wilson, *The Holy City* (ib., 1888); Buhl, *Geographie des alten Palastina* (Freiburg, 1896); Kennedy, "Kidron," in *Dictionary of the Bible* (New York, 1899); Cheyne, "Kidron," in *Encyclopædia Biblica* (London, 1901); Guthe, "Jerusalem," in *Kurzes Bibelwörterbuch* (Freiburg, 1903); Benzinger, *Hebräische Archäologie* (2d ed., Tübingen, 1907).

KIEF, kē'ef. A government of Russia. See KIEV.

KIEFT, kēft, WILLEM (?-1647). A Dutch Colonial administrator, Director General of New Netherland. Little is known of his life before he came to America except that for a time he acted as the Minister of the Dutch government to Turkey. From the day of his arrival in March, 1638, he showed a tyrannical spirit which soon set the people against him. He was pompous, hypocritical, cowardly, and vengeful, and lacked administrative ability. With the exception of the Indian wars, the most noteworthy events of his administration were the battles of words and law which he fought with Dominie Everardus Bogardus, the tailor Hendrick Jansen, and others of his subjects. The prospects for a rapid growth of the Colony were bright when Kieft arrived in New Netherland, for the Dutch West India Company, disgusted with the small results of the patroon system, offered inducements to poorer immigrants, and many of this class were coming to the country and taking up farms along the Hudson and on Staten and Long islands. The Director General, to make room for these settlers, in 1640 sent his soldiers to murder the Raritan Indians—an exploit which was only partially successful, and which was so soon and thoroughly avenged that even he seems to have lost some of his self-assurance. Consequently, when, in February, 1643, the River Indians, fleeing from the Mohawks, sought shelter in the neighborhood of New Amsterdam, Kieft thought best to secure the signatures of three citizens to a petition before he ordered out his soldiers to destroy them.

The massacre which followed is one of the most cold-blooded in the annals of America. The savages, relying on the protection of the Dutch, whom they had every reason to believe friendly, were taken totally unawares, and more than 100 were slaughtered. Then began a war

which resulted in the destruction of the Indians, but meantime the prosperity of the Colony was ruined, farms were desolated and settlers massacred. Popular rage against the Director General knew no bounds, and, after a vain attempt to shelter himself behind the petition, which resulted only in his being assaulted by one of the signers, he called a meeting of the heads of families, and these selected a Council of Twelve, or the Twelve Men, as it was called, which was to act as an advisory committee. This, the beginning of self-government in New York, was more in semblance than in substance, for Kieft paid but slight attention to the counsel of the Twelve. Meanwhile the English on the east and the Swedes on the Delaware had taken advantage of these internal troubles to found strong colonies on Dutch soil, and finally the company, influenced perhaps by a petition from some of the settlers, sent out Peter Stuyvesant to undo the mischief which had been done; and in 1647 Kieft, with Bogardus and Jansen, and two or three others of his most inveterate enemies, sailed for Holland on the *Princess*, an unhappy company and a disastrous voyage, for the little vessel was wrecked on the coast of England, and Kieft, Bogardus, and nearly all of their shipmates were drowned.

KIE-KIE, kī'kī' (Maori name), *Freycinetia banksii*. A trailing or climbing shrub of the family Pandanaceae, which yields an edible aggregated fruit, said to be the finest indigenous fruit of New Zealand. It is found in the northern part of New Zealand and also down the west coast of South Island. The plant climbs the loftiest trees, branching freely, produces leaves 2 or 3 feet long, and clustered spadices. Its fruit is a fleshy berry, and when made into jelly it tastes like preserved strawberries. Consult Thomas Kirk, *Forest Flora of New Zealand* (Wellington, 1889), and Laing and Blackwell, *Plants of New Zealand* (2d ed., ib., 1907).

KIEL, kēl (OS. *Kille*, also *Kyl*). A city of the Province of Schleswig-Holstein, Prussia, on a bay of the Baltic Sea, 70 miles by rail north of Hamburg (Map: German Empire, D 1). It is the chief naval station of Germany and consists of the old city, situated between the harbor and a pool called the Little Kiel, and the new city, together with annexed suburbs (Düsterbrook, Wik, Gaarden, etc.). The naval station is situated on the eastern side of the harbor, near Ellerbek, directly opposite the old city. In this district are the Imperial shipyards (with two large basins connected by a canal), three shipways for the launching of newly built ships, four dry docks, a floating dock, and a haven for torpedo boats. To the southwest of the station are various large private shipbuilding and iron works. The war harbor of Kiel is perhaps the best example of its kind. The fortifications, consisting of the Friedrichsort and Falkenstein forts on the Schleswig side of the harbor, and four powerful shore batteries on the Holstein shore, are situated at a point where the shores approach each other, 5 miles north of the old city. Kiel has several handsome churches, the Nicholas Church dating from 1240 (restored 1877-84). There are also a fine thirteenth-century castle (rebuilt in 1838, now a royal residence), several public gardens, and a zoölogical institute. The principal educational institution is the Christian-Albrecht University, founded in 1665 and attended by over 2000 students, with a museum of antiqui-

ties and a library containing, in 1913, 319,118 volumes. There are also a marine academy and the naval school for officers, the Gymnasium, founded in 1320; a school for engineers; and the Thaulow Museum, containing a collection of wood carvings of the sixteenth and seventeenth centuries. The most important naval hospital of Germany is at Kiel.

The chief industry is shipbuilding, but there are also numerous establishments for the production of heavy machinery of various kinds, safes, spirits, flour, soaps, etc. As a commercial centre, Kiel is very important, having one of the best harbors in Europe and being the eastern terminus of the great Kaiser Wilhelm Canal, which connects the Baltic with the North Sea. This canal was officially closed for the duration of the European War, which began in 1914. (See WAR IN EUROPE.) The principal articles of commerce are cereals, coal, lumber, railroad ties, shingles, cement, dairy products, iron and steel ware, oil, talcum, matches, sugar, etc. The famous Kieler Sprotte (smoked sprats) industry is located at Ellerbek. Kiel holds an annual 12-day fair which plays an important part in the trade of the province. The harbor and environs present a striking appearance. The city is governed by a council and an executive board of magistrates. There are a chief burgomaster and a burgomaster. The city owns the gas works and an abattoir. Pop., 1880, 43,594, 1890, 69,172; 1900, 121,824, including the town of Gaarden, incorporated with Kiel in 1901; 1910, 211,627. The inhabitants are mostly Protestant. Kiel was founded by Adolphus IV of Holstein and was made a city in 1242. In 1284 it became a member of the Hanseatic League. It was annexed to Denmark in 1773 and to Prussia in 1866. By the Peace of Kiel of 1814 Denmark ceded Norway to Sweden.

KIEL, C. VAN. See KILTAAN.

KIEL, FRIEDRICH (1821-85). A German composer, born in Puderbach, near Siegen. He had no teacher in early youth and taught himself composition and the piano. Afterward he entered the orchestra of Prince Karl von Wittgenstein, received some violin lessons from him, and also studied under Kummer at Coburg. He completed his studies under Dehn at Berlin in 1842-44. His first highly successful work was his *Requiem*, brought out by Stern's Gesangverein. His other works included a good deal of religious music, for voice and orchestra, and some instrumental compositions. He was professor of composition at the conservatory in Berlin from 1870 until his death and attained high rank as instructor.

KIEL CANAL. See CANALS.

KIELCE, kyél'tse. The smallest of the governments of Russian Poland, . . . southwestern end of the country . . . B 4). Area, 3897 square miles. It is traversed from east to west by offshoots of the Carpathians and is watered by the Vistula, which separates it from Galicia. The government has deposits of coal, iron, zinc, sulphur, and marble, all of them worked to some extent. The chief occupation of the inhabitants, however, is agriculture. Besides the common cereals, vegetables are grown on a large scale, and the mulberry tree and beetroot also receive some attention. The manufacturing industries include the production of cotton goods, spirits, paper, brick, sugar, glass, leather, machinery, etc. Pop., 1912, 992,500, of whom 11 per cent are Jews. Capital, Kielce.

KIELCE. The capital of the government of the same name in Russian Poland, situated amid high hills about 107 miles from Warsaw (Map: Russia, B 4). In the Bishop's palace, now used as the offices of the Provincial Governor, is a remarkable series of portraits of the bishops of Kielce from 1292 to the Reformation. In ancient times Kielce was noted for its copper deposits, which, however, are no longer worked. The chief products at present are cement, brick, paint, sugar, and hemp articles. Pop., 1912, 32,381. The city was the scene of a number of engagements during the European War of 1914, having been taken and retaken several times. See WAR IN EUROPE.

KIELHORN, kél'hörn, FRANZ (LORENZ FRANZ) (1840-1908). A German Sanskrit scholar, born at Osnabrück. He was educated at Göttingen, Breslau, Berlin, London, and Oxford. From 1866 to 1881 he was professor of Sanskrit in the Deccan C. I. Poona and in 1882 became professor at . . . His works are: *Cāntanava's Phitsūtra*, with translation (1866), *Nāgajibhāṭṭa's Paṛibhāṣendugekharā*, with a translation (1866 and 1874), in the "Bombay Sanskrit Series," which he and Bühler founded in 1866, a *Grammar of the Sanskrit Language* (3d ed., 1888), *Kāṭyāyana and Patañjali* (1876), *The Vyākaraṇa-mahābhāṣya of Patañjali* (1880-85, 2d ed., 1892-1905). His *Report on the Search of Sanskrit Manuscripts* (1881) and contributions to *Indian Antiquary*, *Epigraphia Indica*, etc., on Indian chronology and epigraphy, should also be mentioned. After the death of Bühler he was made editor of the *Grundriss der indo-arischen Philologie*.

KIELLAND, kyél'land, ALEXANDER LANGE (1849-1906). A Norwegian novelist, born at Stavanger. Born to wealth and social position, he studied at Christiania for the law; but he preferred business and was the successful owner of a brick and tile kiln when he published *Novelettes* (1879) and *New Novelettes* (1880), both of which bore clear marks of the study of French models, more especially Daudet, in conception and style. To these qualities *Garman and Worse* (1880, trans., 1885) adds an autobiographical, and *Laboring People* (1881) a socialistic interest. Under the influence of Balzac and Zola he portrays in *Skipper Worse* (1882, trans., 1885), *Poison* (1883), *Fortune* (1884), more of corruption in the upper, and of vice in the lower, classes; he protests in *Snow* (1886) and in *Saint Hans Festival* (1887) against conventional religion; and in *Jacob* (1891) he revolts from the smug optimism of the conservative classes. *Professor Loodahl* was published in 1904. Kielland's novelistic genius may be fairly judged from the translated *Tales of Two Countries* (1891). His comedies, *Homeward Bound* (1878), *Three Pairs* (1886), *Betty's Guardian* (1887), *The Professor* (1888), are less important. He became Burgomaster of Stavanger (1891) and (1892) Governor of Romsdal, where he wrote *Around Napoleon* (2 vols., 1895). His *Complete Works* were published in 11 volumes (Christiania, 1897-98; Ger. ed., 1905-08). Consult: B. Björnson, "A. L. Kielland," in *Kringsjaa* (Christiania, 1896); Georg Brandes, *Samlede Skrifter* (Copenhagen, 1899-1904); M. D. Schjøtt, *A. L. Kiellands Liv og Verke* (Christiania, 1904); V. Vedel, in *Tilskueren* (ib., 1906); A. L. Kielland, *Letters*, edited by his sons (2 vols., ib., 1907).

KIELMANSEGG, kél'mán-ség, ERICH, COUNT

VON (1847-). An Austrian statesman, born in Hanover. He entered the government service of Austria in 1870, held various posts in the administrative offices in the provinces, and was employed in the Ministry of the Interior from 1886 to 1889. He was then appointed Governor of Lower Austria, and in this position he brought about the consolidation of the suburbs with Vienna, the passage of a sanitary law, and other beneficial measures. In 1895 he was appointed Minister of the Interior, the first incumbent of Protestant faith to hold that portfolio in Austria, and was called to preside over a temporary cabinet. After a few months he was again appointed Governor of Lower Austria, and in this position he remained until 1911. He wrote: *Familien-Chronik der Herren, Freiherren, und Grafen von Kriemanssegg* (1872, 2d enlarged ed., 1910), jointly, *Die Bauordnung für das Land Niederösterreich und für Wien* (1883; 6th enlarged ed., 1911), *Briefe an J. F. Diedrich von Wendt* (1902); *Geschäftsvereinfachung und Kanzlerreform bei öffentlichen Ämtern und Behörden* (1906).

K'IENT-LUNG, k'ien'lung', or CH'IENT-LUNG (enduring glory). The reign title of Hung-li, the fourth Emperor of the Ta Tsing, or Manchu dynasty in China. He was the fourth son of Yung-ching, and at the age of 26 succeeded him in 1736. He proved a wise, able, and energetic ruler, reorganized his government and established internal peace, extended his empire to Kashgar and Kulja, established his supremacy in Tibet, exacted tribute from Burma and Nepal, and attempted somewhat unsuccessfully to subjugate the aborigines of Kweichow and Szechwan. It was in this reign that the Turgots, who had in the middle of the seventeenth century emigrated to Russia, returned in 1770 in a body across the desert to their old home in Sungaria, an incident which De Quincey has made memorable by his essay on *The Flight of the Kalmuck Tartars*. He opposed the Catholic missionaries and early in his reign forbade the teaching of Christianity. From 1746 to 1785 persecution was active. The Jesuit Amiot estimated the population of China in 1741 as over 150,000,000. The Emperor maintained friendly though narrow relations with European nations, receiving embassies from Portugal in 1750 and Great Britain and Holland in 1795, all of which were quite barren in results. K'ien-lung was a liberal patron of both literature and art and brought out new editions of the 13 Classics of Confucianism and the 24 Dynastic Histories of China. A great achievement was the descriptive Catalogue of the Imperial Library, in which 3460 works, arranged under the four divisions of Chinese literature, were explained, commented upon, and criticized. He himself wrote essays, discourses, and poetry, his poetical works alone comprising 33,950 compositions. Unwilling to equal or surpass his illustrious grandfather, K'ang-hsi, in the length of his reign, he abdicated when he had reigned for 60 years and died three years later (1799). His successor was the worthless Kia-k'ing. Consult Rémusat, *Nouvelles mélanges asiatiques* (Paris, 1829), and Giles, *China and the Manchus* (Cambridge, 1912).

KI-ENT-POOS. See JACK, CAPTAIN.

KIENZL, kien'z'l, WILHELM (1857-). An Austrian musician, born at Waizenkirchen in Upper Austria. He studied composition under W. Mayer (W. A. Remy) in Graz, under

Krejc in Prague, and under Rheinberger in Munich. His piano technique was acquired at the Graz Gymnasium, under the teaching of Mortier de Fontaine and Liszt. After having made an extensive European concert tour (1881-82), he became chief kapellmeister of the German opera in Amsterdam, occupied a similar position at Krefeld, and from 1886 to 1890 was director of the Styrian Musikverein at Graz. In the latter year he was chosen first kapellmeister of the Hamburg opera, and during the period 1892-93 was Hofkapellmeister at Munich. Kienzl wrote the operas *Urvasi* (1886), *Heilmars, der Narr* (1892), and *Der Evangelimann* (1895), each in succession being received with increased favor. *Don Quixote* (1898) was less successful, but *Der Kuhreigen* (1911) was received with marked favor, and also heard in the United States (1913). He wrote several books: *Die musikalische Deklamation* (1880), *Miscellen* (1885), and a biography of Wagner (1904). He edited a number of musical works and in addition to his operas composed many songs and much instrumental music.

KIEPERT, kē'pērt, HEINRICH (1818-99). A German geographer and cartographer, born in Berlin. From an early age he was an enthusiastic student of geography, history, and philology, and after studying under Ritter devoted two years to the exploration of Asia Minor (1841-42). He first became widely known through his *Atlas von Hellas* (1840-46), which was followed by his *Karten zu Robinsons und Smiths Palästina* (1841). He then turned his attention chiefly to archaeology and, after publishing his *Karte von Kleinasien* (1843-45), several times returned to Asia (1870, 1886, 1888) and carefully explored much of the western part of the continent. He described his researches in works which at once were successful and secured their author important posts. From 1845 to 1852 he was director of the Geographical Institute of Weimar, in 1853 was made a member of the Berlin Academy of Sciences, and in 1859 became a professor in the University of Berlin. Among his best-known works, which bear witness to his great linguistic as well as his learning, are his *Atlas der alten Welt*, *Atlas der Erde und des Himmels* (15th ed., 1874), *Atlas Antiquus*, printed in six languages, and the *Atlas von Hellas*, already mentioned. In addition he wrote: *Lehrbuch der alten Geographie* (1878); *Travels in Asia Minor* (Eng. trans., 1842, 1870, 1889, 1890); and *Historisch-geographische Erläuterung der Kriege zwischen dem ost-römischen Reiche und den persischen Königen der Sassaniden-Dynastie*. The last work was awarded a prize by the French Institute in 1844. Consult J. Partsch, "Heinrich Kiepert, ein Bild seines Lebens und seiner Arbeit," in *Geographische Zeitschrift*, vol. vii (Leipzig, 1901).

KIERKEGAARD, kēr'ke-gard, SÖREN AABYE (1813-55). An eminent Danish philosopher and theological writer, born at Copenhagen. He studied theology at the university of his native town, but was never ordained, and afterward spent two years in Germany. In 1842 he settled at Copenhagen and remained there until his death. His ill health and morbid temperament prevented his becoming known for many years, except as a busy student, but he was one of the most original of Danish writers and thinkers and eventually exerted a strong influence on the literature and religious trend of his country,

not only by the power of his reasoning but through the force and brilliancy of his style. Although far from being an orthodox theologian, he taught that Christianity is the rule and conduct of life and based his philosophy on faith and knowledge. He wrote much in the form of sermons and sketches, as well as longer volumes, and adopted various pseudonyms, such as Victor Eremita, Hilarius Bogbinder, Frater Taciturnus. His most important works are: *Enten—Eller* (Either—Or) (7th ed., 1878); *Stadier paa Livets Vei* (Stages of Life) (1845), and *Indovelse i Kristendom* (On Christian Training) (1850). Consult: Brandes, *Søren Kierkegaard* (Copenhagen, 1877); Barthold, *Die Bedeutung der ästhetischen Schriften Søren Kierkegaards* (Halle, 1879); Harald Hoffding, *Søren Kierkegaard als Philosoph* (Stuttgart, 1896); O. P. Monrad, *S. Kierkegaard, seine Leben und seine Werke* (Jena, 1909); Lukács, *Die Seele und die Formen* (Berlin, 1911).

KIERSY, kyár'sé, EDICT OF. A capitulary of Charles the Bald (877). It was a temporary measure to protect the interests of Charles the Bald during his expedition into Italy. It recognized (1) that the fiefs of vassals who accompanied the King on his expedition should be hereditary and (2) asserted the royal right to dispose of vacant fiefs. It was formerly supposed that this measure established the hereditary principle for fiefs, but this was already in existence. Consult Bourgeois, *Le capitulaire de Kiersy-sur-Orne* (Paris, 1885).

KIESERITE, ké'zër-it. A hydrated magnesium sulphate, found in the mines of Stassfurt, Germany. See EPSOM SALT.

KIESERITZKY, ké'zër-it'ski, LIONEL (1806–53). A noted chess player, born at Dorpat. He lived in Paris, where he was well known among chess players. He invented the king's side attack, known as the "Kieseritzky gambit."

KIESEWETTER, ké'ze-vět'ér, RAPHAEL GEORG (1773–1850). An Austrian writer on music, born at Holleschau, Moravia. He was employed in the Bureau of the Ministry of War and after traveling in various countries settled (1801) in Vienna, where he studied under Albrecht and Hartmann. He made a splendid collection of old musical manuscripts, upon which subject he was an authority. His books were in the field of historical research and include: *Geschichte der europäisch-abendlandischen oder unserer heutigen Musik* (Leipzig, 1834, 2d ed., 1846); *Guido von Arezzo, sein Leben und Wirken* (Leipzig, 1840); *Die Musik der Araber nach Originalquellen* (ib., 1842). He died at Baden, near Vienna.

KIEV, ké'yéf. A government of Little Russia, occupying the larger portion of the Ukraine (q.v.). Area, about 19,340 square miles. The northern part is low, thickly wooded, and in part swampy (Map. Russia, D 5). In the west the surface is traversed by offshoots of the Carpathians. The central and southern portions have essentially a steppe character. The territory is watered chiefly by the Dnieper and its tributaries, the Pripiet and the Teterev. The southern part belongs to the basin of the Bug. Kiev is among the most fertile regions of European Russia. Agriculture is the chief occupation; rye, wheat, oats, potatoes, and barley are the chief products, and there are extensive beet-root farms. Its sugar manufacture is one of the most important of all Russia. Stock raising is confined principally to the southern part,

where the natural conditions are most favorable. The breeding of horned cattle is of particular importance on account of the extensive use of oxen as a means of transportation. The local breed of cattle is highly prized in Russia. The manufacturing industries are also highly developed and include agricultural implements, cloth, soap, candles, tanneries, and iron and steel manufacturing establishments. The sugar mills alone employ over 30,000 persons. The house industry is only slightly developed, and a considerable proportion of the artisan population migrate for a part of the year to the larger centres of the Empire. The industries were somewhat depressed by the rioting which occurred just after the Russo-Japanese War of 1905. The trade is important and is to a large extent in the hands of the Jews. Pop., 1912, 4,635,700, chiefly Little Russians, Jews, Poles, and Lithuanians.

KIEV. The capital of a government of the same name, a third-class fortress, and the oldest of the famous cities in Russia (Map: Russia, D 4). It is situated on the right bank of the Dnieper in lat. 50° 27' N. and long. 30° 30' E., 624 miles southwest of Moscow and 270 miles north of Odessa. It lies on and amid several hills. The lower parts of the town are annually flooded by the Dnieper. Kiev is divided into the three principal parts of Old Kiev, the upper town, Petchersk with the famous monastery and the old fortifications, and the low-lying business quarter of Podol. There are besides 12 suburbs, incorporated with the city at comparatively recent periods. Two magnificent iron bridges reach across the Dnieper. One of them is a cable bridge 3510 feet long.

The prominent part played by Kiev, "the mother of Russian cities," in the political and ecclesiastical history of the nation naturally has had an influence on the local architecture, the ancient churches, monasteries, and historical remains making it one of the most interesting of cities. The Petcher-kaya Lavra (monastery of caves, named in reference to the original buildings) is a celebrated monastery. It was founded by the Metropolitan Hilarion in the eleventh century and for a long time served as a model for other Russian monasteries. It was destroyed by the Tatars in 1240 at the first invasion, but was rebuilt in the fifteenth century. It occupies a prominent site on the Dnieper, is surrounded by strong walls, and forms a separate town with its streets of cells, inns, and churches, printing presses, and schools. The great church of the monastery contains the tombs of many ecclesiastical dignitaries and its treasury is filled with ancient Bibles, sacred vessels, and ecclesiastical costumes. The original caves of the monastery now possess the remains of numerous saints and are visited annually by throngs of pilgrims from all parts of Russia. The monastery of St. Vladimir has a church of the twelfth century, with well-preserved ancient frescoes. The famous cathedral of St. Sophia, built by Yaroslav in 1037 and modeled after the church of St. Sophia in Constantinople, has many specimens of ancient paintings and sacred relics. Other interesting ecclesiastical edifices are the church of the Three Saints, founded by the Grand Duke Vladimir in 989 and rebuilt in 1696; the church of St. Cyril, a twelfth-century edifice with ancient frescoes; and the cathedral of St. Andrew, a Renaissance structure of the eighteenth century. The cathedral of St. Vladi-

mir, decorated with excellent frescoes, is considered one of the finest churches in Russia. The secular edifices are of far less interest. The Imperial Palace, a French Renaissance building, contains collections of objects of art. One of the most interesting historical remains is the Golden Gate, a restored portion of the ancient fortifications. The town hall and the buildings of the University of St. Vladimir are also noteworthy. The university was founded in 1588 at Vilna and was removed to Kiev in 1833. It has four faculties—history, mathematics, law, and medicine—and in 1902 the total attendance was 4131, of whom a large number were medical students. The university library has about 150,000 volumes. Among other educational institutions are a theological academy which was founded in 1588 and which was for a long time the best-known institution of its kind in Russia, a polytechnic institute, five Gymnasias, a military school, and several other special schools. There are also a museum containing a fine collection of ancient icons, crosses, and other sacred objects, a number of scientific associations, hospitals, philanthropic institutions, and three theatres. Kiev is the seat of a metropolitan and head of the educational district of Kiev. It is also the seat of an appeal court.

The chief industries of Kiev are sugar refining, milling, and distilling, and the manufacture of tobacco, paper, chemicals, machinery, hardware, etc. It forms one of the chief centres of the Russian beet-sugar trade and deals heavily in grain, live stock, and timber. It is famous for its conserved fruits. Its commercial interests are promoted by a stock exchange and a good harbor. An important fair is held annually in February. The population was 186,041 in 1889, 320,000 in 1904, and 506,000 in 1911. During the summer it is increased by some 200,000 pilgrims.

The origin of Kiev is obscure and legendary. It is known to have existed as early as the fifth century. In the ninth century it became the capital of an independent principality and attained wide fame during the reign of Vladimir, when, after the introduction of Christianity, it became the religious centre of Russia. Its prosperity came to an end with the thirteenth century, its splendor and wealth having made it the object of attacks on the part of the neighboring tribes and later of the Mongols. It came under the rule of Lithuania in 1320 and began to revive, soon succeeding in attaining important municipal privileges. It was given Magdeburg rights in 1499. Under Lithuanian rule the city also resumed its former position as a religious centre of West Russia. It passed with Lithuania to Poland in 1569. It became Russian in 1668. The fortifications were restored by Peter the Great. In November, 1905, following the grant of a constitution by the Czar, there were violent disturbances in the city and a massacre of the Jews.

KIFTI, or **IBN AL-KIFTI**, *ib'n al-kāf'tē* (Ar. *Jamal al-Din abu'l-Hasan 'Alī ibn Yusuf al-Kifti*) (1172–1248). An Arabian vizier and historian. He was born of good family at Kift (Coptos), Upper Egypt, and received a good education there and in Cairo. After Saladin had conquered Jerusalem (1187), Al-Kifti went to that city, where his father held an official position under the Sultan. In 1202 he betook himself to Aleppo and there, much against his will, was made vizier by Saladin's son. When

the prince died in 1216, Al-Kifti gave up his office, but was again forced to assume public cares from 1219 to 1231 and again from 1236 till his death, in 1248. He was an able administrator, and the state prospered under his care; literature and learning flourished. But his best title to fame rests upon his favorite studies, although of his numerous histories all were destroyed in the Mongol invasion (1260) except one. This was his *Kitāb Ikhbār al-'Ulamā bi-akhbār al-Hukamā* (Information of the Wise Men Regarding the History of the Scientists), a historico-bibliographical work on Greek, Syriac, and Mohammedan philosophers and scientists. Unfortunately this most important work has come down to us only in the extract made by Ali ibn Mohammed al-Zanzani in 1249. Consult August Müller, "Ueber das sogenannte ta'rikh al-hukamā des Ibn el-Qifti," in the *Proceedings of the Eighth International Congress of Orientalists*, vol. i (Leyden, 1891).

KI-JA, *kā'-jā'*. See **KI-TSĚ**

KIKINDA, **NAGY**, or **GROSS**. See **NAGY-KIKINDA**.

KIKUYU, *kē-kōō'yōō*. A region in the southern part of the British East African Protectorate, lying on the equator. Missionary societies of various Christian bodies work in the region, and in June, 1913, the Protestant missionaries held a conference to promote efficiency in their common work. The Bishop of Uganda, Dr. Willis, presided, and the Bishop of Mombasa officiated at a communion service. They were speedily accused of heresy by the Bishop of Zanzibar, Dr. Weston, who demanded that they be impeached because they had admitted to the communion those not members of the Church of England. The incident precipitated a controversy which showed the radical differences between the High Church on one side and the evangelical and liberal Anglican parties on the other. The Archbishop of Canterbury called a council to meet in July, 1914, to advise in the matter.

Bibliography. Frank Weston, *Ecclesia Anglicana* (London, 1913); id., *Proposals for a Central Missionary Council in East Africa* (ib., 1914); H. H. Henson, *The Issue of Kikuyu. A Sermon Preached before the University of Oxford* (ib., 1914); A. H. Nankivell, "Kikuyu and the A. I. R. P. Party," in the *Catholic World*, vol. xcix (New York, 1914); W. G. Peel, *Fresh Light on the Kikuyu Conference* (London, 1914); J. J. Willis, *The Kikuyu Conference: A Study in Christian Unity* (ib., 1914).

KILAUEA, *kē'lā-ōō-ā'ā*. A noted crater in the eastern part of the island of Hawaii, 10 miles from the sea and 30 miles southwest of the port of Hilo, on the east slope of the great volcano of Mauna Loa, 4000 feet above the sea, and 9800 feet below the summit of Mauna Loa (Map: Hawaii, F 4). It forms a great cavity on the side of the mountain, 3 miles long, 2 miles wide, and in the parts where the lava is not boiling from 500 to 800 feet deep. The floor of the crater, formed by the lava streams that constantly flow and cool in one or another part of it, accumulates slowly in periods of moderate activity, but is subject to sudden changes of level during great volcanic activity, when the lava may escape from vents on the lower slope towards the sea. This somewhat permanent crater floor is accessible by a steep trail on the northern cliff. At the southwest end of this great sink is a small lake called Halemaumau

(house of everlasting fire), frequently filled with boiling lava which is fed through subterranean channels and in periods of moderate activity either melts or flows over its rim to the lower level of the main crater basin, forming small or large streams upon its black surface, which cool quickly. The great eruptions from this crater were those of 1789, 1823, 1832, 1840, and 1868. There seems to be no subterranean connection between the sources of the eruptions from Mauna Loa and Kilauea, each having its periods of terrible activity without seeming to affect the other. Kilauea-iki (little Kilauea) is a companion crater of the same depressed type, a mile north of the main crater; it is now extinct and offers particular opportunity for the study of the Kilauea volcanic type. Consult J. D. Dana, *Characteristics of Volcanoes* (New York, 1891).

KILBOURNE, kil'börn, JAMES (1770-1850). An American pioneer, born in New Britain, Conn. In 1800 he became a Protestant Episcopal clergyman. Two years later he was sent to Ohio by the Scioto Land Company to select lands on which to found a settlement and the next year, after the adoption of the State constitution, which prohibited slavery, he purchased the territory now forming Sharon Township in Franklin County. He was soon joined by about 100 settlers from New England, and in 1804 laid out the village of Worthington (now a suburb of Columbus), where he organized the first Episcopal church in Ohio. Soon afterward he resigned from the ministry, and in 1805 Congress appointed him surveyor of public lands. From 1813 until 1817 he represented the Fifth District in the United States House of Representatives, and in 1823-24 and 1838-39 served in the Lower House of the State Legislature. During his services in Congress he proposed granting lands in the Northwest to actual settlers and was chairman of the committee which drew up the bill embodying this legislation. Among the local offices which he held were those of colonel of a frontier regiment, commissioner for Miami University, and trustee of Worthington College.

KILCH. A small whitefish (*Coregonus hiemalis*) of the Lake of Constance, in Switzerland, which is a favorite article of food. It dwells at the bottom, where it is caught with nets. When brought to the surface of the water, the belly is greatly distended by the expansion of the air in the swimming bladder; but the fishermen prick the bladder with a fine needle, the air escapes, and the fish continues to live comfortably at the surface.

KILDARE, kil-dar' (Ir. *Kill-dara*, church of the oaks). An inland county of the Province of Leinster, Ireland. Its area is 654 square miles (Map: Ireland, E 5). The proportion of pasture land exceeds that devoted to tillage, stock raising being the chief industry. The principal towns are Naas, Athy, Newbridge, and Kildare. Pop., 1841, 115,190; 1901, 63,566; 1911, 66,627. Consult Murphy, "Kildare: Its History and Antiquities," in *Journal of the County of Kildare Archaeological Society* (Dublin, 1898).

KILDARE. A parish and market town in County Kildare, Ireland, 30 miles southwest of Dublin. It owed its origin to a nunnery founded in the fifth century by St. Bridget, the daughter of an Irish chieftain, who received the veil from St. Patrick. Notwithstanding its present decayed condition it is interesting for its antiqui-

ties, which comprise the restored thirteenth-century cathedral; an old cross; Franciscan and Carmelite abbeys; a portion of the chapel of St. Bridget, popularly called The Fire House, from a perpetual fire anciently maintained there; and the round tower, 103 feet in height, which crowns the elevation on which the town is built. Pop., 1901, 1576, 1911, 2639.

KILDARE, EARL OF. See FITZGERALD, THOMAS, LORD OFFALY.

KILGO, JOHN CARLISLE (1861-). An American Methodist Episcopal bishop and college president, born at Laurens, S. C. He was educated in various schools, receiving the degree of M.A. from Wofford College in 1892. He entered the ministry of the Methodist Episcopal Church South in 1882. From 1889 to 1894 he was agent of Wofford College and from 1890 to 1894 professor of philosophy there; thereafter until 1910, when he was elected Bishop, he was president of Trinity College, Durham, N. C. He was a member of the General Conferences of 1894, 1898, 1902, 1906, 1910, and of the Ecumenical Conference of 1901.

KILHAM, ALEXANDER (1762-98). The founder of the New Connection of Wesleyan Methodists, often called Kilhamites. He was born at Epworth, Lincolnshire, July 10, 1762; was converted at the age of 18, began to preach among the Wesleyans in 1783 and was the first to advocate the representation of the lay element in the government of the church; in 1785 he was received by Wesley into the regular itinerant ministry. After the death of Wesley there was much controversy among his followers as to the duty of continuing their submission to the Established church. Kilham was of the class urging a total separation from the Church of England. He was severely criticized for his assertion of popular rights in the church and for the publication of a pamphlet on the *Progress of Liberty* (1795), in which he urged a distribution of the powers of government between the clerical and lay elements. For severe remarks regarded as defamation of the society, he was formally arraigned at the conference held in 1796 and expelled from the connection by a unanimous vote. This resulted in the formation of the independent body called New Connection Methodists, which united with the Methodists in 1906. He died at Nottingham, Dec. 20, 1798. Consult Townsend, *Life of Alexander Kilham* (London, 1890).

KILIA, kil'ya. A fortified town in the Government of Bessarabia, South Russia, situated on the left bank of the Kilia branch of the Danube, 100 miles southwest of Odessa (Map: Russia, C 5). It is a thriving little town, with a customhouse. Pop., 1912, 10,874.

KILIAAN, kil'ian, CORNELIS (1528-1607). A Dutch scholar, also called VAN KIEL and KILIANUS. He was born at Duffel and was educated at Louvain. He worked as a proof reader for the celebrated press of Plantin. His *Etymologicum Teutonicæ Linguae* (1574; revised under the title *Kilianus Auctus*, 1642; edited by Van Hasselt, 1777) is his great work.

KILIAN, kil'yan, ST. (c.644-689 or 697). A missionary and martyr of the seventh century. He was born in County Cavan, in the Province of Ulster, Ireland, about 644, entered the monastic life in his native country, and became a bishop. Having undertaken, in company with several of his fellow monks, a pilgrimage to Rome, he was seized in his journey through the

still pagan region of Franconia with a desire to devote himself to its conversion, and, being joined by his fellow pilgrims, Coloman and Donatus, he obtained for the project at Rome, in 686, the sanction of the Pope Conon. On his return to Würzburg he succeeded in converting the Duke Gosbert, with many of his subjects, and in opening the way for the complete conversion of Franconia; but, having provoked the enmity of Geilana, who, although the widow of Gosbert's brother, had been married to Gosbert, by declaring the marriage invalid and inducing Gosbert to separate from her, he was murdered at her instigation, during the absence of Gosbert, together with both his fellow missionaries. His day, May 8, is celebrated with great solemnity at Würzburg. The work which Kilian commenced was completed some years later by Boniface and his fellow missionaries. Consult: Bollandus and Heuschenius (eds.), *Acta Sanctorum*, *Julii 2* (Paris, 1867); O'Hanlan, *Lives of the Irish Saints*, vii (Dublin, 1875-1904); Emerich, *Der heilige Kilian* (Würzburg, 1896).

KILIMANJARO, kil'i-mán-já'ró. A volcanic mountain in the northern part of German East Africa, the highest elevation of the continent, situated in lat. 3° 6' S., long. 37° 23' E., about midway between the Indian Ocean and the Victoria Nyanza (Map: Africa, H 5). It rises abruptly from the surrounding plain and culminates in the two peaks of Kibo and Kimawenzi, separated by a saddle 14,000 feet high. The south slope has a gentle incline, with many streams and 13 glaciers. The north slope rises abruptly. The inhabited portion lies below 6000 feet and produces an abundance of tropical fruits. Vegetation ceases entirely at 14,000 feet above sea level. The peak of Kibo, with an altitude of 19,728 feet, has a crater over 6000 feet in circumference and 600 feet deep, with its walls covered with ice in the northern part. Kimawenzi is 17,500 feet high. The Kibo peak has been ascended by Hans Meyer (1889 and 1898), C. Uhlig (1901 and 1904), and Captain Johanniss (1902).

Bibliography. Johnston, *The Kilimanjaro Expedition* (London, 1886); Hans Meyer, *Ostafrikanische Gletscherfahrten* (Leipzig, 1893); trans. by E. H. S. Calder under title of *Across East Africa Glaciers* (London, 1891); id., *Der Kilimanjaro, Reisen und Studien* (Berlin, 1900); Carl Uhlig, "Von Kilimandscharo zum Meru," in *Gesellschaft für Erdkunde, Zeitschrift* (ib., 1904); Johannes Schanz, "Besiedelung der Landschaften des Kilimandscharo durch die Dschagga," in *Baessler-Archiv* (Leipzig, 1913).

K'I-LIN, kē'lin', or **CH'I-LIN**, sometimes **KI-LIN**, in Japanese **KIRIN**. The Chinese unicorn. One of the four supernaturally endowed creatures of Chinese and Japanese tradition. K'i is the male and lin the female. The appearance of this fabulous animal on the earth is regarded as a happy portent, presaging the advent of good government. It lives to the age of 1000 years, is the noblest form of the animal creation, the emblem of perfect good, and is supposed to be the incarnated essence of the five primordial elements—water, fire, wood, metal, and earth. The k'i-lin occupies a prominent place in Chinese and Japanese art. It is usually pictured with the body and slender legs of a deer, the tail of an ox, and with a single soft horn projecting from its forehead. It is said to tread so lightly as to leave no footprints and so carefully as to crush no living thing. Confucius closes

his brief history of his own State of Loo with a record of the advent of the K'i-lin and Phoenix. In the form *Kylin* the name is often erroneously applied by writers on ceramics to lions, or to the lion-like, grotesque creatures with which the Chinese fill in rocky landscapes, etc.

KILKENNY. An inland county of the Province of Leinster, Ireland, bounded south by Waterford (Map: Ireland, D 6 and 7). Area, 800 square miles. The principal industries are connected with coal mining and agriculture, but iron, manganese, and marl are also produced. Capital, Kilkenny (q.v.) Castlecomer is the centre of the coal district. Pop., 1841, 202,750; 1900, 79,159; 1911, 74,962.

KILKENNY (Gael., church of St. Kenny, or Canice). The capital of the County of Kilkenny, Ireland, and itself a civic county, situated on the Nore, 81 miles south-southwest of Dublin by rail (Map: Ireland, D 6). The city owes its origin to the cathedral church of the diocese of Ossory, which dates from the twelfth century. The Anglican cathedral of St. Canice dates from 1255, the partially restored abbey church of St. John's, called the Black Abbey, is one of the few ancient Irish churches now in actual occupation for the religious use of Roman Catholics. The cathedral is the second largest church in Ireland and has an excellent library of rare old books. There are noteworthy remains of a twelfth-century castle (now owned by the Ormonde family), a Dominican and a Franciscan abbey. The College or Grammar School of Kilkenny was founded in the sixteenth century. Here Swift, Farquhar, Congreve, and Berkeley were educated. St. Kieran's College is an educational establishment for the Roman Catholics and is interesting as one of the first opened by them after the repeal of the law which made Catholic education penal in the country. From the time of the invasion Kilkenny was a strong seat of the English power.

Kilkenny has small manufacturing establishments of blankets and coarse woolen and linen cloths, but the greatest activity is in the near-by collieries. There are large marble works and a large provision trade, the chief outlet of which is Waterford. The town returns one member to the British Parliament. During the Civil War Kilkenny sided with the King and after a year's siege honorably capitulated to Cromwell in 1650. Swift's satire of the "Kilkenny Cats," which shows their tails alone were left, illustrates the confusion on boundaries and rights between Kilkenny and Irishtown in the seventeenth century, which were maintained until both towns became bankrupt. Pop., 1901, 10,609; 1911, 10,514. Consult: John Hogan, *Kilkenny, the Ancient City of Ossory, the Seat of its Kings, the See of its Bishops and the Site of its Cathedral* (Kilkenny, 1884); Healy, *History of Kilkenny* (ib., 1893); James Donelan, "The Confederation of Kilkenny," in *Studies in Irish History* (2d series, Dublin, 1906).

KILLANIN, BARON. See MORRIS, MICHAEL.

KILLARNEY, kil-lär'ní. A parish and market town of County Kerry, Munster, Ireland, situated 1½ miles from the lower Killarney Lake, and 46 miles west-northwest of Cork (Map: Ireland, B 7). It has an imposing Roman Catholic cathedral and a school of arts and crafts. The beauty of the surrounding country attracts large numbers of tourists every spring and summer. Pop., 1901, 5656; 1911, 5796.

KILLARNEY, kil-lär'ní. A town, the capi-

tal of Souris District, Manitoba, Canada, on the Canadian Pacific Railway, 164 miles west-south-west (direct) of Winnipeg (Map: Manitoba, D 4). Industrial establishments include a flour mill, cement-block plant, sash and door factory, and five grain elevators. It is a popular summer resort. Pop., 1901, 585, 1911, 1010.

KILLARNEY, LAKES OF. Three connected lakes near the centre of County Kerry, Ireland (Map Ireland, B 7). The upper lake, studded with islands and close shut in by mountains, is $2\frac{1}{2}$ miles long and $\frac{3}{4}$ of a mile broad. It is connected by Long Range River, 3 miles long, with the middle lake (Torc Lake) which is 2 miles long by 1 mile broad. The lower lake (Lough Leane), with about 30 wooded islands, is 5 miles long by 3 broad. They are fed by the river Flesk and many smaller streams, the main outlet is the Laune. They are favorite summer resorts, annually visited by thousands of tourists for their varied and beautiful scenery, which is heightened by the rich colorings of the shores, the graceful outlines of the surrounding mountains (the loftiest in Ireland), and the interesting ruins of the fifteenth-century Ross Castle, Muckross Abbey, and other antiquarian remains. Consult Ballantyne, *The Lakes of Killarney* (London, 1859).

KILL/DEER, or KILL/DEE. The most widely known of American plovers (*Ægialitis*, or *Oxyechus vociferus*). It is 9 or 10 inches long and about 20 inches in extent of wing. It is grayish brown above, with an olive shade, and occasionally a bronzy lustrous orange brown or chestnut on the rump, and white beneath; there are black markings on head and breast, and the tail is variegated with black, white, and rufous. The nest is made on the ground, in grass or shingle, usually near water. The eggs, usually four, vary in color from creamy white to drab marked with blackish brown, and are 1.5 inches long (See Colored Plate of EGGS OF WATER AND GAME BIRDS). The killdeer is found throughout North America, from Newfoundland and Manitoba southward, and even into northern South America in winter. In the northern part of its range it is migratory, but from Virginia southward it is resident. It is not numerous in New England, but becomes more common in the Central States and is very abundant in the West. The name is based upon the very characteristic notes, which are generally uttered either while the bird is on the wing or when it is running about in its nervous, restless way. It is incessantly in motion, and, though often seen about farmyards, it seems to distrust man, and his presence generally causes much vociferous objection. They are seldom found singly except during incubation and are generally seen in small flocks of six or seven individuals. In the fall these usually are family groups. Although the killdeer when fat is edible, it is not usually ranked as "game" and is not much hunted. See PLOVER, and Plate of PLOVERS.

KILL'EN, WILLIAM DOOL (1806-1902). An Irish educator and ecclesiastical historian. He was born in Antrim, was educated at Belfast, and in 1829 was ordained a minister of the Irish Presbyterian church. During his career as an educator he was chiefly identified with the Presbyterian College at Belfast. In 1841 he was appointed professor of Church history and pastoral theology in that institution, and in 1869 he was appointed its president. He wrote: *Plea of Presbytery* (1840), a continuation of

Reid's *History of the Irish Presbyterian Church* (1853); *The Ancient Church* (1859); the *Old Catholic Church . . . Traced to 755* (1871); the *Ecclesiastical History of Ireland from the Earliest Period to the Present Times* (1875); *Reminiscences of a Long Life* (1901); and other works.

KILLER. A small carnivorous whale of the genus *Orca*. These dolphins are notable for the fact that they are the only cetaceans which habitually attack and devour mammals. On account of their propensity to destroy more animals than they can eat, they are widely known as killers. The genus is distinguished from other dolphins by the following characteristics: beak about as long as head, broad, flat, and rounded, teeth about 12 on each side of each jaw, very large and stout, with conical recurved crowns; pectoral fin very large and ovate, about as broad as long, dorsal fin near middle of back, excessively high, and pointed; vertebrae, 51 or 52. A full-grown male is 20 feet long, with a dorsal fin 6 feet high, while the female is somewhat smaller. The surface of the body is smooth and glossy and is remarkably free from parasites.

Killers are found in all parts of the world and sometimes swim up rivers in pursuit of their prey, which consists of large fish, seals, dolphins, and even whales. Killers generally go in small schools of a dozen or less, but sometimes larger numbers are seen together. The whales, especially the beluga, are hunted down and killed by these schools. They seem to be fearless and are said to have stolen captured whales from whaling vessels, in spite of opposition by the sailors. Killers are seldom captured by whalers, as they yield very little oil, but in some regions they are taken for food, and they are of importance to the Arctic coast trade.

The number of species of killers is still greatly in doubt, for, in spite of their very wide distribution, specific characters are not clearly defined. Not less than eight species have been described, but there is a reasonable possibility that there are fewer valid species. The North Atlantic species (*Orca gladiator*) has been longest known, but the habits of the North Pacific killers have been more generally observed. In color the killers show great variety, though they are usually dark above, some being jet black, and light beneath. Behind the eye is a clear white spot, and there is a crescent-shaped band back of the dorsal fin, sometimes white and sometimes maroon. Smaller individuals, possibly different species, are more or less striped. Consult: Scammon, *Marine Mammals of the Northwest Coast of North America* (San Francisco, 1874); F. E. Beddard, *Book of Whales* (New York, 1900); Wilson, *National Antarctic Expedition*, vol. ii (London, 1907); R. F. Scott, *Scott's Last Expedition*, arranged by Leonard Huxley (2 vols., New York, 1913); and the zoologists cited under ALASKA. See DOLPHIN; WHALE.

KILLIECRANKIE, kil'ī-krāp'ki, BATTLE OF. A battle which took place on July 17 (N. S., July 27), 1689, in and about the pass of Killiecrankie, in the Grampian Hills, and about 15 miles northwest of Dunkeld, Scotland, between 3000 or less Jacobitish Highlanders under Graham of Claverhouse, Viscount Dundee, and a royal force of about 4000 Dutch, Lowland Scots, and English under Hugh Mackay. Just as Mackay and his army had emerged from the pass Dundee and his Highlanders rushed down

from the hills above and drove the enemy back into the pass with heavy loss, but Dundee lost his own life while leading the charge.

KIL/LIFISH. Any of the minnow-like North American fresh-water fishes of the family Pöcillidæ (formerly called Cyprinodontidæ and erroneously associated with the Cyprinidæ). Consult Regan, *Proceedings of the Zoological Society, London* (London, 1913). The body is elongate, compressed behind and usually depressed at the head; and both are covered with rather large cycloid scales. The mouth is small, extremely protractile, and provided with small teeth; the lower jaw usually projects, and the pharyngeal bones are not armed, as in the Cyprinidæ. The sexes are usually unlike, and some of the species are viviparous. In these the anal fin of the male is modified into an intromittent organ. The species are numerous; but none attains a large size, and some are extremely small. They inhabit the fresh-water streams, brackish water and bays of America, southern Europe, Africa, and Asia. The family includes the top minnows and mummichog, and the interesting anableps, or four-eyed fish. Many of the species are extremely resistant and have become adapted to very diverse habitats. There are 30 genera and about 180 species. The name "killifish" is especially applied to the genus *Fundulus*, chiefly American, whose species are the largest of the cyprinodonts, and some very brightly colored. Jordan says that they are oviparous and feed chiefly on animals. Some of them live on the bottom and bury themselves in the mud of estuaries; others frequent river channels and bays and swim freely; and still others, called top minnows, remain on or near the surface and feed on floating insects in streams and swamps. The largest species of the eastern coastal region is *Fundulus majalis*, also called Mayfish; a lesser or even more familiar form is the mummichog, cobbler, or mudfish (*Fundulus heteroclitus*), which is to be met with in every pool and stream of brackish water from Maine to Texas. A Florida species is called sac-a-lait. They are useful for bait and make interesting pets in an aquarium. See Plate of KILLIFISHES AND TOP MINNOWS.

KILLIGREW, HENRY (1-1712). An English admiral, son of Henry Killigrew, the divine mentioned by Pepys, and a brother of the poet and painter Anne Killigrew. Of his life nothing is known apart from his connection with the navy, which he had entered before 1666. In 1673 he had risen to the rank of captain. Through the five years following he was employed on the southern coast of the Mediterranean and in 1686 as commodore commanded a squadron against the Barbary pirates, but accomplished little. With Richard Haddock and John Ashby he was joint commander in 1690 and in 1693 held a like post with Cloudesley Shovel and with Ralph Delavall, who with Killigrew was dismissed from command in June on the charge of treason in behalf of James. After 1697 Killigrew figured in the naval lists as an officer on half pay.

KILLIGREW, THOMAS (1612-83). An English dramatist, son of Sir Robert Killigrew, born in London. He was appointed in 1633 page to Charles I, traveled on the Continent, was made groom to the bedchamber of Charles II and chamberlain to the Queen. Killigrew is closely connected with the revival of the drama after the Restoration. In 1660 Charles II granted

him a patent to build a new theatre and raise a company of players. Killigrew accordingly formed the company of the King's servants and built the Theatre Royal, subsequently known as Drury Lane. His own plays, some of which were written before the Civil War, were printed in 1664. Notable among them is *The Parson's Wedding* (first performed perhaps as early as 1637). It is reprinted in Dodsley's *Old Plays*.

KILLING, KIL'ing, WILHELM (1847-). A German mathematician, born in Burbach, Westphalia, and educated at Münster and Berlin. He was a private tutor, then taught in Gymnasias, and in 1892 became professor of mathematics in the University of Münster. His distinctive work in non-Euclidean geometry brought him the Lobachevsky prize of the Kazan Academy in 1910. Killing wrote: *Die nicht-euclischen Raumformen* (1883); *Erweiterung des Raumbegriffs* (1884); *Die Lieschen Transformationsgruppen* (1886); *Einführung in der Grundlagen der Geometrie* (1893-98); *Lehrbuch der analytischen Geometrie in homogenischen Koordinaten* (1900-02); and, with Hovestadt, *Handbuch des mathematischen Unterricht* (1910-13).

KIL/LINGLY. A town, including several villages, in Windham Co., Conn., 25 miles north by east of Norwich, on the Quinebaug and Five Mile rivers, and on the New York, New Haven, and Hartford Railroad (Map: Connecticut, H 2). It has the Killingly High School and Bugbee Memorial Public Library, and manufactures cotton and woolen goods, mill supplies, shoes, harness, etc. Pop., 1910, 6564. Killingly, formerly Aspinock, was incorporated under its present name in 1708. In 1836 it was said to be the greatest cotton-manufacturing town in the State. Consult Larned, *History of Windham County, Conn.* (2 vols., Worcester, 1874), and Bayles, *History of Windham County, Conn.* (New York, 1889).

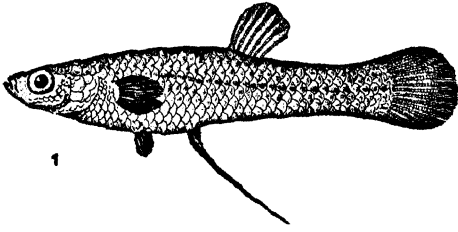
KIL/LINGTON PEAK. The second highest elevation of the Green Mountains in Vermont. It is 9 miles east of Rutland; its height is 4241 feet and it is a conspicuous landmark.

KILLOWEN, BARON RUSSELL OF. See RUSSELL, SIR CHARLES ARTHUR.

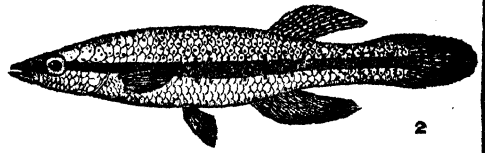
KILMAINHAM, kil-mān'am. A western suburb of Dublin, Ireland, and a township of Dublin County. Pop., 6500. Here is situated Kilmainham Hospital, an establishment for the reception of wounded and pensioned soldiers, originally founded by King Charles II, and conducted on similar principles to the sister institution, Chelsea Hospital (q.v.). Kilmainham Hospital is maintained by an annual parliamentary grant and provides for upward of 250 veterans and officers. Near the hospital is Kilmainham jail, where Parnell was confined in 1882. "The Treaty of Kilmainham" was an alleged agreement between Gladstone and Parnell, according to which Parnell promised to exert his influence against the commission of agrarian crime in Ireland, upon condition that Gladstone secured the introduction into Parliament of a legislative measure affecting the Land Act of 1891.

KILMARNOCK. A municipal and police burgh in Ayrshire, Scotland, on Kilmarnock Water, 12 miles north-northeast of Ayr (Map: Scotland, D 4). It has a fine town hall, library, art museum, atheneum, and theatre. Its educational institutions include an observatory, school of science and art, and an institute of philoa-

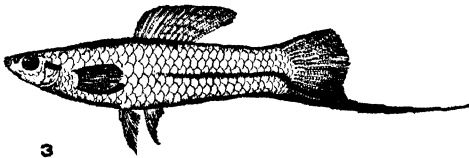
KILLIFISHES AND TOP-MINNOWS



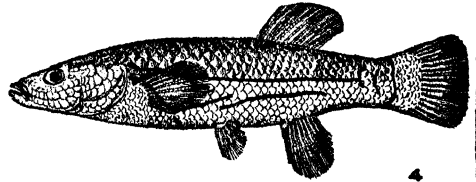
1



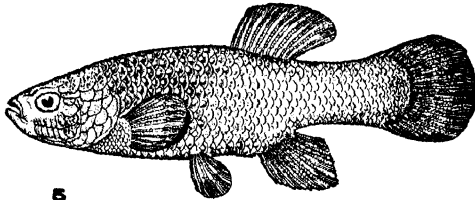
2



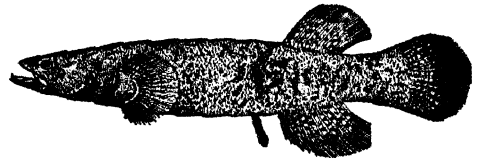
3



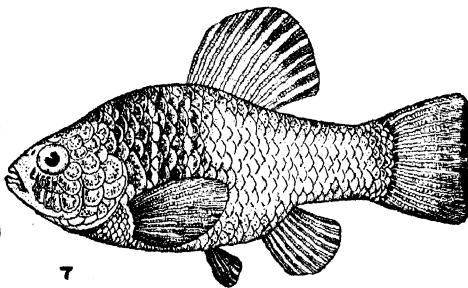
4



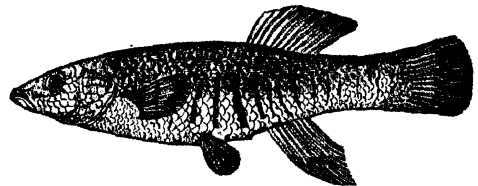
5



6



7



8

1. LONG-FINNED TOP-MINNOW (*Gambusia affinis*).
2. TOP-MINNOW (*Fundulus notatus*).
3. SWORD-MINNOW (*Xiphophorus helleri*).

5. COMMON KILLIFISH (*Fundulus heteroclitus*).
6. ALASKAN BLACKFISH (*Dallia pectoralis*).
7. PURSY MINNOW (*Cyprinodon variegatus*).

ophy. The Robert Burns Memorial (the poet's first work was published in Kilmarnock) contains originals of the Burns manuscript and a splendid library of the poet's works. It has large engineering establishments, woolen mills, carpet and lace-curtain manufactories, machine shops, blast furnaces, tanneries, shoe factories, etc. The neighborhood is rich in coal and iron, and its dairy produce is extensive. The largest cheese show in Scotland is held here, the value of the exhibits generally amounting to about £35,000. Pop., 1901, 34,165, 1911, 34,728. Consult McKay, *History of Kilmarnock* (Kilmarnock, 1848).

KILN, kil (AS. *cylm*, *cylene*, from Lat. *culina*, kitchen). A furnace or oven, for burning brick, earthenware, or pottery, for making charcoal, for roasting carbonate-iron ores, and for burning lime or cement. The kilns are made of stone, brick, or iron; and, according to the method of conducting the operation, they are divided into two classes. *intermittent kilns*, in which the fire is permitted to go out after the charge is burned, and *continuous kilns*, in which the charge may be removed and a fresh one put in while the fire is kept burning. The continuous kilns are of different types according to the class of product to be burned, and the fuel may be oil, gas, powdered coal (which gasifies on entering the kiln chamber), or solid coal. Kilns are also classified in accordance with the course of the draft, into *up-draft* and *down-draft*; and by shapes, into *round*, *rectangular*, *conical*, and *annular*, the latter having a series of cells around a central compartment. Moreover, a kiln is said to be *regenerative* if the gas and air before combustion is preheated by passage through a checker work of brick which has been previously heated by the waste gases of combustion escaping from the kiln.

Portland Cement Kilns may be divided somewhat arbitrarily into (1) intermittent dome or bottle kilns, (2) ring or Hoffmann kilns, (3) continuous-shaft kilns, and (4) rotary kilns. *Dome kilns* consist of a calcining chamber, surmounted by a chimney, which together form a structure resembling a large bottle in shape. At the bottom of the kiln are a set of removable grate bars, and a door for admitting air to the fire and for the burned clinker. Near the top of the chamber are one or more openings called charging eyes, through which the new mixture and fuel are fed into the kiln. The chimney-like structure provides the necessary draft for the fire, carries away the gases of combustion, and serves to keep the temperature of the kiln uniform. Dome kilns are built of rough stone, brick, or concrete masonry, lined with fire brick, the lining being so constructed that it can be removed and rebuilt without disturbing the kiln structure proper. The kilns are charged by replacing kindling wood on the grate bars and filling above to the level of the charging eyes with alternate layers of fuel and raw mixture. When calcination is complete, the kiln is allowed to cool down and the clinker is withdrawn. The operation of the kiln is thus intermittent. A modification of this type is equipped with a drying tunnel, through which the charge passes, and is dried by the waste heat of the kiln, resulting in a saving of fuel. This modified type of the dome kiln has been used in England, but at only one or two localities in the United

States. Dome kilns are going out of use in the Portland-cement industry.

Ring or Hoffmann kilns have been much used in Germany, but not in England or the United States. They consist of a series of chambers arranged around a central stack, each chamber being connected by flues with its neighbors and the stack. After the chambers are filled through side doors, one is started by feeding coal fuel through roof openings. The heat from this passes through several chambers ahead before being drawn off to the stack, thus heating these up, so that less fuel is required to burn them. As soon as one chamber is burned and cooled, it can be emptied. There will thus always be one chamber at high fire, others cooling down, others heating up, and loading and unloading going on from still other chambers.

Continuous-shaft kilns consist essentially of a high vertical chamber, whose several sections, known as the preheating, burning, and cooling chambers, may or may not be in line. The cement mixture is charged at the top, and the fuel may be added there or part way down. The charge then is continually moving downward, and the burnt cement or clinker is drawn off at the bottom.

Rotary kilns for burning cement are distinctly an American development, although the device was invented in England. A rotary kiln consists of a steel or iron cylinder, 60 to 150 feet long, lined with fire brick or some other refractory substance to resist the heat, and mounted on roller bearings, generally placed at two points near the ends. A circumferential rack on the shell enables the cylinder to be rotated by worm

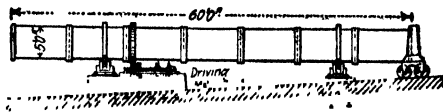


FIG. 1 ROTARY CEMENT KILN

by a sprocket chain. The head of the cylinder is inclosed by the chimney in such a manner as to be free to rotate and is somewhat higher than the front, which is covered by a movable cap, through which the crude oil or powdered coal is forced by air pressure. The raw material, either dry or wet, is fed into the upper end of the kiln and gradually works towards the bottom, in consequence of the inclination and the rotary movement of the cylinder. Calcination takes place during the passage.

Natural Cement and Lime. Both these products are usually burned in kilns of the vertical continuous-feed type. In cement burning the fuel is generally mixed with the rock; but while this may be done in lime burning, it is desirable to feed the fuel separately, as then it does not come in contact with the lime and discolor it. See CEMENT.

Brickkilns may be *temporary* or *permanent*. The former are built up of the bricks themselves, generally in a number of rows of parallel arches, which may contain from 25,000 to 40,000 brick and be from 25 to 50 courses in height, called a *scove kiln*. (See BRICK.) Burnt brick are placed around the outer sides and on top of the kiln, the walls being daubed with mud. Openings are left at the top to permit the escape of steam arising from the liberated moisture in the brick. Fires are started in the windward end of each arch, then at the other

end, and allowed to approach each other slowly, several days sometimes being required. The doors are closed and sealed to prevent the entrance of air. Wood, coal, or oil may be used for fuel, the oil requiring special burners and being used but comparatively little. *Permanent brickkilns* have fixed side walls, but may be open or closed at the top. If open, the fires extend beneath the whole length of the charge, the gases passing upward, much as in temporary kilns. If closed, the fire boxes are on both sides in rectangular kilns, or at regular intervals around a circular kiln. Permanent, closed-top kilns may be up-draft or down-draft. In the former the fire enters the bottom of the kiln chamber and passes out at the top. In the latter it follows the reverse course. *Continuous brickkilns* have a series of connecting chambers fired in succession, the gases passing from the first to the second, and so on. Filling, burning, and emptying go on in different chambers at the same time. The type was described under Portland-cement kilns. *Fire brick* and *refractory ware* are frequently burned in down-draft kilns, which must be lined with fire brick. Burning requires five or six days, and cooling several days more. *Paving brick*, in the Middle

If the ware is decorated, it receives a low heat firing to fix the colors after their application. Each firing is performed in a separate kiln. In the biscuit oven the temperature is believed to

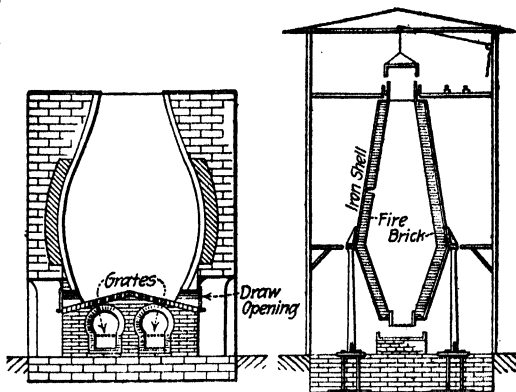


FIG. 3. BRICK AND BRICK-LINED IRON OR STEEL LIMEKILNS.

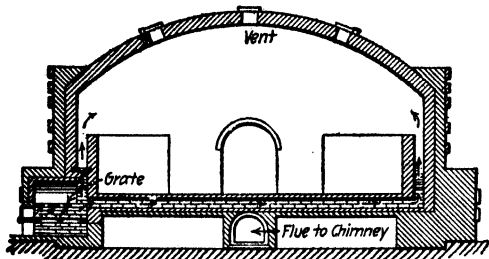


FIG. 2. DOWN-DRAFT BRICKKILN.

West of the United States, are generally burned in the down-draft kilns. The temperature while burning ranges from 1600° to 2300° F. The burning takes from four to six and the cooling from three to six.

Charcoal Kilns, when of a permanent character (see CHARCOAL), are dome-shaped structures, with doors, a grate, ash pit, and an outlet near the top for the volatile products.

Pottery Kilns are of many kinds, depending upon the ware that is to be burned and the consequent amount of heat required. Earthenware, stoneware, and porcelain each require different degrees of heat, the intensity varying in the order named. (See POTTERY.) The kilns are usually circular. Earthenware and stoneware are stacked up in the open kiln chamber, while earthenware and porcelain are first carefully packed in fire-clay boxes called *saggers*, and these are piled up in stacks called *bungs* in the kiln, an average kiln holding 40 or 50 bungs. The kilns are usually built on the down-draft principle. Forty or 50 hours are usually necessary for the first firing of the pottery, and as many more are allowed for it to cool off. The kilns are generally very large, and the whole process of burning requires from 7 to 14 days. The white earthenware and porcelain are first fired to the biscuit stage; the glaze is then applied, and the wares are fired in the glost kiln, the temperature of this second burning being lower than the first in the case of white earthenware and higher in the case of true hard porcelain.

reach 2500° F., in the gloss or glaze ovens 1900°, and in the enamel oven not more than 1400°. Pottery kilns are usually in the form of a tall cylinder of various dimensions, from 15 to 30 feet in diameter, 15 to 20 feet high, and terminated by a truncated cone of about two-thirds the height of the cylindrical part.

Architectural Terra-Cotta Kilns are usually cylindrical, down-draft, and of the muffle type; i.e., they have double walls between which the fire passes so that it does not come in contact with the ware. Heat is applied for 5 to 6 days, reaching a temperature of about 2300° F. Porous terra-cotta tiles (see TILE) are burned for a much shorter period, the sawdust mixed with clay being consumed during the process. *Sewer pipe* is generally burned in round, down-draft

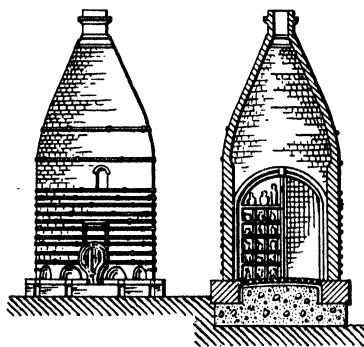


FIG. 4. ELEVATION AND SECTION OF TERRA-COTTA KILN.

kilns, the process requiring from five to seven days.

Roasting Kilns are used for expelling moisture, bituminous matter, carbonic acid, and sulphur from iron ore, by burning fuel either solid or gaseous in contact with the ore. This kiln, of a capacity up to 600 tons each, consists of a cylindrical brick-lined sheet-iron casing converging at the bottom. When gas-fired, there is a central down-draft flue for the escape of the waste gases, the roasting being accomplished in the narrow annular space. The operation is continuous. The Gjer kiln is an example of this

type using solid fuel, and the Davis-Colby ore roaster of those using gaseous fuel. Consult annual issues of *The Mineral Industry of the United States* (New York), *Transactions of the American Institute of Mining Engineers* (ib.), and *Transactions of the American Ceramic Society* (Columbus, Ohio), for the prevailing practice in various industries in which kilns are used. For lime and cement kilns, consult Eckel, *Cements, Limes, and Plasters* (New York, 1907), and Ellis Soper, "Rotary Kiln in the Manufacture of Portland Cement," in *American Society of Mechanical Engineers, Journal*, vol. xxxii (Baltimore, 1910).

KILO- (from Gk. *χίλιοι*, *chilioi*, thousand) A prefix meaning 'one thousand' and employed in the metric system to denote that the given magnitude is 1000 times larger than the fundamental unit. Thus, a kilometer is 1000 meters, a kilogram 1000 grams, etc. Kilo is also employed as an abbreviated form of kilogram. See METRIC SYSTEM.

KILOWATT, kil'ô-wôt (from Gk. *χίλιοι*, *chilioi*, thousand + Eng *watt*, from the Scottish engineer James Watt) A unit of power equivalent to 1000 watts or 1000 joules per second. It is equal to 1341 horse power. See WATT; ELECTRICAL UNITS.

KILPATRICK, HUGH JUDSON (1836-81). An American soldier, one of the most brilliant cavalry leaders on the Federal side in the Civil War. He was born near Deckertown, N. J., graduated at West Point in 1861, and on May 9 entered the Federal service as captain in the Fifth New York Volunteers, generally known as Duryea's Zouaves. He was wounded at Big Bethel on June 10, was engaged in a regiment of cavalry in August, and on September 25 became lieutenant colonel of the Second New York Cavalry. From 1862 to 1864 he took a prominent part in nearly all the cavalry operations connected with the campaigns of the Army of Virginia and the Army of the Potomac, making innumerable raids and gathering information of Confederate movements. In one of his raids in 1863 he covered more than 200 miles in less than five days, fought skirmishes daily, and during this time captured and paroled more than 800 prisoners, with a loss to himself of only one officer and 37 men. In the second battle of Bull Run and afterward in the battle of Gettysburg he served with conspicuous gallantry. In December, 1862, he was promoted to be colonel, and in June, 1863, to be brigadier general, United States volunteers, while he received the brevet of major and lieutenant colonel in the regular army for gallantry at Aldie, Va., and Gettysburg respectively. In March, 1864, he participated in a celebrated raid towards Richmond and down the Virginia peninsula, and in April was placed in command of a division of cavalry in the Army of the Cumberland, then engaged, under Sherman, in the invasion of Georgia. Wounded at Resaca, he recovered in time to guard Sherman's communications effectively. At the close of the war he was brevetted brigadier general in the regular army for services in the capture of Fayetteville, N. C., and major general for his services during the campaign in the Carolinas, and in June, 1865, attained the regular rank of major general of volunteers. He resigned his commission in the regular army in December, 1865, and his commission in the volunteer service in January, 1866, and from December, 1865, to August, 1868, was United States

Minister to Chile—a position which he again held from June, 1881, until his death at Santiago, in December. Consult Moore, *Kilpatrick and our Cavalry* (New York, 1865), and William Small, *Camp-Fire Talk on the Life and Military Services of Major-General Judson Kilpatrick* (Washington, 1887).

KILUNG, kē'lung' A seaport in Formosa. See KELUNG.

KILVEY, BARON GRENFELL OF. See GREENFELL, FRANCIS WALLACE.

KILWA KIVINJE, kēl'wā kē-vēn'yā, or QUILOA, kē'lō-ā. A seaport town of German East Africa, situated 180 miles south of Zanzibar (Map Congo, G 4). It has a customhouse and a spacious roadstead much frequented by merchant vessels; its trade is chiefly in rubber and timber. Pop., 1910 (est.), 100,800. Kilwa Kivinje has supplanted the town of Kilwa Kisiwani, situated on an island 17 miles to the south. The latter, founded about 1000 by Prince Shiraz of Persia, is now almost abandoned, but during the Arab domination it was a flourishing port for the East African slave trade.

KILWINNING. A municipal and police burgh in Ayrshire, Scotland, 3½ miles north of Irvine (Map Scotland, D 4). It is the seat of a large engineering and fire-clay works, woolen and muslin manufactures, numerous coal pits, and the Eglinton Ironworks. The parish church, built in 1775, occupies part of the site of the famous abbey of Kilwinning, founded in 1140. The town is noted as the birthplace of freemasonry in Scotland, and until the institution of the Grand Lodge in 1736 all other lodges in Scotland received their charters from "Mother Kilwinning." Pop., 1901, 4440, 1911, 4945. About a mile to the southeast stands Eglinton Castle, the scene of the famous Eglinton Tournament in 1839.

KIM. A story by Rudyard Kipling (1901), generally considered one of his best, telling the adventures of an Irish waif in India, who acquired marvelous knowledge of the Orient.

KIMAWENSI. See KILIMANJARO.

KIMBALL, ARTHUR LALANNE (1856-). An American physicist, born at Succasunna Plains, N. J. He graduated in 1881 at Princeton and in 1884 took his Ph.D. at Johns Hopkins, where he remained as associate in physics (1884-88) and associate professor (1888-91). In 1891 he was appointed professor of physics at Amherst. In 1883-84, under the general direction of Professor Rowland (q.v.) of Johns Hopkins, and by appropriation made by the United States government, he made a valuable series of experiments for the determination of the unit of electric resistance. His writings include *The Physical Properties of Gases* (1890); *College Physics* (1911).

KIMBALL, HEBER CHASE (1801-68). An American Mormon leader and priest. He was born at Sheldon, Vt., and was the son of a blacksmith. He was baptized into the Church of the Latter-Day Saints in 1832, was shortly afterward ordained an elder by Joseph Smith, the founder of the church, and in 1835 became one of the "Twelve Apostles." In 1837, and again in 1840, he went as a missionary to England, where he made many converts. In 1846 he was made head priest of the Order of Melchizedek, in 1847 was chosen as one of Brigham Young's counselors, and in 1849 became Chief Justice and Lieutenant Governor of the State of Deseret. In 1848 he was indicted for treason

by a United States grand jury, but was never brought to trial.

KIMBALL, JAMES PUTNAM (1836-). An American geologist, born at Salem, Mass. His training was obtained at the Lawrence Scientific School (Harvard), at the universities of Berlin and Göttingen, and at the Freiberg (Saxony) School of Mines. Subsequently he was a member of the geological surveys of Wisconsin and Illinois. In 1861-62 he was professor of chemistry and economic geology in the New York State Agricultural College (Ovid), and in the latter year was appointed assistant adjutant general of United States volunteers, with rank of captain. He took part in the various campaigns of the Army of the Potomac as chief of staff to Gen. M. R. Patrick and was afterward on the general staffs of McClellan, Burnside, Hooker, and Meade. Until 1874 he practiced as a mining engineer in New York; from 1874 to 1885 he was honorary professor of geology in Lehigh University, and in 1885-88 he was director of the United States Mint. His writings, in addition to official reports, include contributions on geology and metallurgy to American and foreign periodicals.

KIMBALL, KATHERINE (?-). An American etcher. She was born in New Hampshire and studied at the National Academy of Design, New York. She is represented in the permanent collections of the New York Public Library, the Boston Museum, the South Kensington Museum, London, and the Bibliothèque d'Art et d'Archéologie, Paris. Her illustrations for Okey's *Paris* (1904), Gilliat Smith's *Brussels* (1906), Sterling Taylor's *Canterbury* (1912), and, for the "Artist's Sketch Book Series," on *Rochester* (1912), are much esteemed, as are also her contributions to the *Century Magazine*, the *Queen*, the *Studio*, and the *Gazette des Beaux-Arts*. She became an associate member of the Royal Society of Painters, Etchers, and Engravers, London, and member of the Section de Gravure of the Salon d'Automne, Paris, and of the Chicago Society of Etchers.

KIMBALL, MARTHA GETRUEDE (1840-94). An American philanthropist, born in Portland, Me. She accompanied her husband, who was appraiser of captured cotton, to the front in the Civil War, acted as nurse during Sherman's campaign in Georgia, and was appointed inspector of hospitals. Acting on her suggestion, General Logan, as head of the Grand Army of the Republic, introduced the observation of Decoration Day.

KIMBALL, RICHARD BURLEIGH (1816-92). An American essayist and novelist. He was born in Plainfield, N. H., graduated at Dartmouth College in 1834, went to Paris in 1836 after two years' study of law, and upon his return practiced successfully in Waterford, N. Y., and in New York City. From 1854 until 1860 he was president of the Galveston and Houston Railroad, which he had projected—the first railroad built in the State of Texas. The most important of his varied writings, which include novels, essays, and books of travel, are: *Letters from England* (1842); *Saint Leger* (1850); *Cuba and the Cubans* (1850); *Romance of Student Life Abroad* (1853); *Undercurrents of Wall Street* (1861); *Was he Successful?* (1863); *The Prince of Kashna* (1864); *Henry Powers, Banker* (1868); *To-Day in New York* (1870); *Stories of Exceptional Life* (1887).

KIMBALL, SUMNER INCREASE (1834-).

The organizer of the United States life-saving service. He was born at Lebanon, Me., graduated from Bowdoin in 1855, and was admitted to the bar in 1858. In 1859 he was elected to the Maine Legislature and in 1862 became a clerk in the Treasury Department at Washington. He was placed in charge of the revenue marine service and the life-saving service in 1871 and by thorough reorganization greatly increased the efficiency of the latter. In 1878 this service was organized into a separate bureau, with Mr. Kimball at its head, and under his direction was extended to the Pacific coast and the Great Lakes. He served also as acting Register, acting Comptroller, and acting Solicitor of the Treasury. He is the author of *Organization and Methods of the United States Life-Saving Service* (1889) and *Joshua James—Life Saver* (1909).

KIMBALL, WILLIAM WIRT (1848-). An American naval officer, born at Paris, Me. He graduated from the United States Naval Academy in 1869, and rose through the various grades to that of captain in 1905 and of rear admiral in 1908. One of the first officers to serve on the earliest American torpedo boats, he did much for the development of machine and magazine guns, and later for the improvement of submarines. During the war with Spain he commanded the Atlantic torpedo boat flotilla; later he served on the boards of construction, examination, and retirement; and commanded the Nicaraguan expeditionary squadron in 1909-10. He was retired by operation of law in 1909, but remained in active service for another year.

KIMBERLEY, kím'ber-li. A town of Cape of Good Hope Province, South Africa, the capital of Griqualand West, near the frontier of the Orange River Colony, 647 miles by rail north-east of Cape Town. It is 4012 feet above the sea (Map: Cape of Good Hope, G 7). It has a fine courthouse, city hall, a free library, a museum, theatre, botanical gardens, a good system of water works supplied from the Vaal River, and is lighted by electricity. Kimberley, founded in 1871, owes its existence to the extensive diamond mines situated in its vicinity, owned entirely by the De Beers Corporation. It is one of the chief seats of this valuable industry and is also an important intermediate trading station between Cape of Good Hope Province and the interior of Africa. It is noted for its fine breed of horses. During the South African War Kimberley was defended by the British troops under Colonel Kekewich, and from Oct. 15, 1899, withstood a siege of 126 days by the Boers until relieved by General French. Memorial Hall was built during the siege. The Honoured Dead Memorial commemorates those who fell in the defense of the town. Pop., 1891, 28,718 (including 12,658 whites); 1904, 34,331 (13,556 whites); 1911, 49,823 (17,059 whites).

KIMBERLEY. The northern division of Western Australia (area, 144,000 square miles), fertile and pastoral where watered by the Ord and Fitzroy rivers; and in the region of the gold fields, discovered in 1882 (Map: Western Australia, H 3). Chief town, Derby.

KIMBERLEY, JOHN WODEHOUSE, first EARL OF (1826-1902). An English statesman, born in London, Jan. 7, 1826. He studied at Eton and graduated at Christ Church, Oxford, in 1847 with a first-class in classics. He succeeded his grandfather as third Baron Wodehouse be-

fore he had attained his majority and 20 years afterward was made Earl of Kimberley. He entered public life in 1852, as Undersecretary of State for Foreign Affairs—a position he held until 1861, with an intermission of a Russian embassy (1856–58). In 1863 he was an envoy to Copenhagen in connection with the Schleswig-Holstein affair and in 1864 was appointed Undersecretary at the India Office. He was Lord Lieutenant of Ireland (1864–66) under Lord John Russell, and Gladstone made him Lord Privy Seal (1868–70) and Secretary of State for the Colonies (1870–74 and 1880–82). He was Secretary of State for India in 1882–86, and again in 1892–94, until appointed Foreign Secretary in Lord Rosebery's cabinet (1894–95). In 1892 he was appointed Lord President of the Council, in 1897 led the Liberal opposition in the House of Lords, and in 1899 was made chancellor of London University. For several years Kimberley was the Liberal leader in the House of Lords, and while he was Colonial Secretary the town of Kimberley in the diamond region of South Africa was named for him. He died in London, April 8, 1902.

KIMCHI, kim'ké. A family of Hebrew scholars of the Middle Ages—The most famous member of the family is DAVID KIMCHI (generally quoted by the initials of his name, RaDaK—i.e., Rabbi David Kimchi), who was born at Narbonne about 1160 and lived until about 1235. His achievements were chiefly in the field of biblical exegesis and Hebrew grammar. His merit lies not in originality, but in the excellence of his compilations, in consequence of which his works exercised a great influence upon his successors. In his grammatical exposition he follows largely Ibn Janach (q.v.), but he wrote exclusively in Hebrew. His grammar and lexicon have appeared in many editions. His commentaries are still widely used among the Jews. They were among the first to be printed in the so-called Rabbinical Bibles, containing the Hebrew text with selected commentaries. The most important of them is a commentary on the prophetic books. A new edition of his commentary on the Psalms was begun by Schiller-Szinessy, but only the first part appeared (Cambridge, 1882). An edition of his commentary on Genesis appeared at Pressburg in 1842. In the great Maimonides controversy (see MAIMONIDES) Kimchi was on the side of Maimonides. Consult Tauber, *Standpunkt und Leistung des R. David Kimchi als Grammatiker* (Breslau, 1867).—Kimchi's father, JOSEPH (flourished 1150–70), gave the impetus to Jewish culture in southern France, whither he emigrated from Spain. He wrote biblical commentaries and grammatical treatises. Of his commentaries there have been preserved only those on Proverbs and Job, which have been published, and a commentary on the Song of Songs, which is unpublished. His grammatical works have been edited by Bacher and Matthews (Berlin, 1888).—David's older brother, MOSES (flourished 1170–90), also engaged in studies similar to those of his father and brother. A compendium of Hebrew grammar compiled by him enjoyed great popularity by reason of its simplicity and brevity and was published in a number of editions. It first appeared in 1608. The edition of 1546 (Venice) was published by Elias Levita, who added a commentary that has since then generally appeared in the editions of the grammar. Of his biblical commentaries only

those to Job, Proverbs, and Ezra and Nehemiah are known.

KIMPOLUNG, kêm'pô-lung. A town of Rumania. See CAMPULUNG.

KIN (AS. *cynn*, Goth. *kuni*, OHG. *chunni*, kindred; connected with OIr. *cine*, Lat. *genus*, Gk. *γένος*, Lith. *gamas*, Skt. *jana*, race, kind, from *jan*, to beget), NEXT OF. In English and American law, those who are so related by ties of consanguinity to a decedent as to be entitled to share in the distribution of his personal estate. The phrase does not therefore comprehend all who may be entitled to participate under statutes of distribution, as a wife, who is not of her husband's kin; nor all those who are related by ties of blood, but only those whose blood relationship is in the next order of consanguinity to the decedent. Next of kin are also to be distinguished from heirs, or those in the order of consanguinity to whom the real property of an intestate will pass by descent. These are, indeed, always next of kin, but they do not necessarily include all who answer that description. By the common-law canons of descent, under which the male descendant is preferred to the female, and, among males of equal degree, the eldest to those who are younger, a single member of the class constituting the next of kin may become the sole heir. In the United States, however, where those rules have been abolished, the next of kin are generally the same as the heirs at law. See ADMINISTRATION; CONSANGUINITY; DESCENT; DISTRIBUTION; HEIR.

KINÆSTHESIS, KINÆSTHETIC (kin'ēs-thēt'ik or kī'nēs-) **SENSATIONS**. Sensations whose organs are in the motor apparatus of the body and in the inner ear, and which are set in function by bodily movements. They thus form a subclass of the organic sensations (q.v.). Kinæsthetic sensations are usually divided into two groups—those of the muscle sense, including muscular pressure, articular pressure, and tendinous strain, and those of the static sense, including the ampullar and vestibular sensations. See MUSCLE SENSE; STATIC SENSE; MOVEMENT, PERCEPTION OF; ORGANIC SENSATIONS.

KINÆSTHETIC SENSATIONS IN ANIMALS. In the simpler animal forms it is not possible to make a distinction between kinæsthetic sensations (q.v.) and the sensations of touch. (See MECHANICAL SENSE IN ANIMALS.) The mental lives of some vertebrates, however, appear to involve distinctly kinæsthetic experiences, which may play a prominent rôle in the animal's consciousness.

It has been found that white rats are able either to find their way through a labyrinth which they have previously learned, or to learn the route through a new labyrinth, after they have been rendered blind (by extirpation of the eyes), anosmic (by removal of the olfactory lobes), partially deaf (by destruction of the middle ear), and partially anæsthetic (by anæsthetization of the feet and removal of the vibrissæ). In these mutilated animals the sensations of movement must constitute the principal means of guidance, although it may be the case that other sensory "cues" are utilized by normal individuals. The normal rat which has learned the path through a labyrinth shows, furthermore, that it remembers the lengths of the paths largely in kinæsthetic terms. For instance, if the distance over which the rat should pass before turning be shortened, the rat will usually run past the right turn into a blind

alley; and if, on the other hand, the distance be increased, the rat will often turn at the accustomed place and bump into the wall. If an individual is placed in the midst of a labyrinth with which it is familiar, it runs about until it appears to "get the feel" of a particular passage; then it starts off, traversing the remainder of the route rapidly. Its behavior is similar to the highly, kinæsthetic, coördinated performance of the human subject in a complex act, such as the playing of a difficult piece on the piano; after an interruption the player may not be able to continue, but will fumble the keys until he chances upon a correct movement, which immediately sets off the subsequent action. This similarity to human performance, together with the fact that the human subject who has learned a maze finds that consciousness is principally kinæsthetic, argues for the prominence of kinæsthesia in the rat's mind. It may be that the static sense (q.v.) is also involved in the maze consciousness of the rat. The animal's disturbance when a labyrinth with which it is familiar is rotated through 90° has been attributed by some writers to a static disorientation.

There are no experimental results which indicate that the consciousness of any animal other than the rat may become limited solely to kinæsthetic sensations. Kinæsthetic or organic sensations have, however, been ascribed with some positiveness to crawfish, perch, frogs, English sparrows, vesper sparrows, cowbirds, pigeons, guinea pigs, and dancing mice.

The great development of the semicircular canals in fishes hints at a corresponding development of the static sense, but there is no direct evidence that these organs mediate sensation. Similarly, the otocysts or statocysts of the lower animals (see HEARING IN ANIMALS; EAR, COMPARATIVE ANATOMY OF) suggest a kinæsthetic accompaniment, which has not however been established.

Consult Watson, "Kinæsthetic and Organic Sensations: Their rôle in the Reactions of the White Rat to the Maze," in *Psychological Review Monograph*, sup., vol. viii (Lancaster, Pa., 1907); also general bibliography under ANIMAL PSYCHOLOGY.

KINAK, kâ-nâk'. See KUSKOKWIM RIVER.

KINCARDINE, kin-kâr'dîn. A port of entry in Bruce Co., Ontario, Canada, on Lake Huron, and on the Grand Trunk Railway, 74 miles west-southwest (direct) of Collingwood (Map: Ontario, C 5). It has steamship connections with Cleveland and Sault Ste. Marie. The town possesses a public library, two parks, and owns its electric-lighting plant and water works. Its industrial establishments include bridge and boiler works, salt works, a pork-packing plant, and manufactories of sashes, doors, and furniture. Sand, clay, salt, marl, and limestone are found in the vicinity. Kincardine has become a popular summer resort. Pop., 1901, 2077; 1911, 1956.

KINCARDINESHIRE, or THE MEARNS. A maritime county in the northeast division of Scotland, with Aberdeenshire and the Dee on the north, Forfarshire and the North Esk on the south and west, and the North Sea on the east (Map: Scotland, F 3). Area, 381 square miles, or 244,000 acres, of which 121,000 are in cultivation. It is traversed by the Grampians. Chief towns, Stonehaven, the capital, Banchory, Inverbervie, and Laurencekirk. Pop., 1801, 26,350; 1851, 34,600; 1900, 40,923; 1911, 41,008.

KINCHAS'SA. A station of Congo Free State. See LEOPOLDVILLE.

KIN'CHINJIN'GA. A mountain peak of the Himalayas. See KUNCHINJINGA.

KINCHOW, or NANSHAN, BATTLE OF. See RUSSO-JAPANESE WAR.

KIND, kint, JOHANN FRIEDRICH (1768-1843). A German poet, dramatist, and romancer, born in Leipzig. He began in 1793 the practice of law in Dresden, but abandoned it in 1814 to devote himself exclusively to literary work. With Winkler he edited the *Abendzeitung* from 1817 to 1826. His poems (5 vols., 1808) are weakly sentimental, but his tales and novels, though not strong, appealed to many readers. He is, however, best remembered for his *Das Nachtlager von Granada* (music by Kreutzer), *Der Holzdieb* (music by Marschner), and especially for the libretto of *Der Freischütz*, imperishable through Weber's famous composition. But he is said to have borrowed the ideas of this from Apel's tale of the same name. Consult H. A. Kruger, *F. Kind und der Dresdener Liederkreis* (Leipzig, 1904).

KINDERGARTEN, kîn'dêr-gar'ten (Ger, children's garden). A school for children from the third or fourth to the seventh year, suggested and introduced by Friedrich Fröbel (q.v.), through whom the natural activity of the child in play is so organized as to assist in the physical, mental, and moral development. Fröbel first grasped the essence of the idea of evolution in its application to education and saw the importance of the earlier stages. To him education was a setting free of the powers inherent in the individual. By an understanding of the child's instinctive tendency towards the physical, through gradual, continuous exercises, his best tendencies can be strengthened, and at the same time he can acquire a certain preliminary knowledge of the world of nature and man around him. Thus, the child gains control over his own being, develops power of thought, self-control, accuracy of sense perception, and a tendency towards an active intellectual life.

Fröbel was a close student of child life. Hence his suggestions of means and methods for the kindergarten work were based on accurate knowledge of child nature and have been of permanent value. The mere play instinct alone would not suffice, but the plays and games must be selected and organized. Fröbel classified the material to be so used as gifts and occupations. The kindergarten is a new social institution for the child, in which he has free scope to be himself while being also one of a community of equals towards whom he must observe his duties and accept the responsibility of his part in the whole. The gifts and the occupations are there introduced gradually and in a logical order. As he becomes familiar with the properties of the one, he is led on to the next, which properly grows out of the first, each introducing new impressions and repeating the old.

The first gift is composed of six rubber or woolen balls, three of the primary and three of the secondary colors. The ball is chosen as the simplest type form, from which may be derived all other forms, as embodying the element of constancy and unity. Through the balls the idea of comparison is introduced, and sensation and perception become clearer and stronger through the similarity, contrast, and discrimination made possible by the almost innumerable exercises and games. The second gift, compris-

KINDERGARTEN



TYPICAL KINDERGARTENS

- 1 Interior of H S Christian Memorial Kindergarten, Brooklyn, N Y
- 2 Children of Pratt Institute Kindergarten, Brooklyn, N Y, gardening

ing a wooden ball, cylinder, and cube, carries impressions further, and offers not only in itself, but also with the first gift, a strong illustration of contrasts and their connections. In shape, in material, in hardness, in color, etc., it contrasts with its predecessor, but is like it in the common shape of the balls. With the *third gift*, consisting of a wooden cube cut once in each dimension to form eight smaller cubes, begins the first impression of a whole divisible into similar parts. Here, too, are the first steps in number, in analysis of construction, the first suggestion, in the gifts, of the relation of the individual to the whole, and of the need of every perfect part to form a perfect unit. With the use of this gift the child accustoms himself to regularity, care, precision, beauty. The *fourth gift*, a cube like that of the third, but cut once horizontally and twice vertically into eight rectangular parallelograms, introduces especially the new element of a whole composed of parts unlike itself. The *fifth* and *sixth gifts* are but extensions of the *third* and *fourth*, with more material and differing forms of solids. The *seventh gift* consists of cardboard and triangular tablets of cardboard or thin wood, giving a basis for studies in surfaces and colors. The *eighth* and *ninth gifts* are introductory to drawing, and consist of small strips of laths and of rings and circles in cardboard, which can be arranged into all sorts of patterns.

The development of Fröbelian principles has caused much more stress to be placed upon the occupations than upon the use of the gifts. These occupations are, modeling in clay and in cardboard, and, later, wood carving, or sloyd, paper folding, in two and three dimensions: paper cutting, paper mosaic, and work with the color brush, mat plaiting, slat weaving, paper weaving, sewing, wax or cork work with sticks, drawing in checks and free, bead threading, and perforating. These occupations are grouped above, not in the order of their use, but as they deal with solids, surfaces, and lines and points. The union of part with part in the exercises is maintained by a central, continuous thread from which spring all the exercises of day, week, and month, that thought always dealing with subjects within the general and local experience of the kindergarten children. The songs, games, and stories, which hold together the periods of gift and occupation exercises, are also an integral part of them, growing out of them and their necessities. While they are the means of developing the singing voice, facility in language, grace and strength of body, they are also compassing the powers of attention, observation, imagination—they are helping the child to think, to obey law, to govern himself, to stand in the proper attitude towards his environment. Another aspect is the industrial connection of the kindergarten with life. Manual training, not in special but in general dexterity, forms an important part of the kindergarten training. From the delicacy of touch, as needed in such gifts as paper folding and parquetry, to the strength and decision gained by the hands in clay modeling, all degrees of handling are introduced, accuracy becomes a second nature, and crisp, distinct action is attained. The kindergarten also develops an interest in nature and gives the child an impulse to study its forces and phenomena.

The more recent development of the kinder-

garten theory has led to the rise of two schools—the “conservative,” or traditional, which clings to much of the Fröbelian symbolism and mysticism but is not wholly uninfluenced by modern tendencies, and the “liberal,” which does not look to philosophy for guidance but to the recent contributions of child and genetic psychology. The liberal kindergarten is accordingly conceived of, not as an institution for the development of a philosophical and mystical theory, but for the provision of a suitable environment to develop the impulses of the child, its desire to communicate, to dramatize, to represent, and to construct. Not formalism or a fixed theory, but the child itself and its awakening impulses as a member of society, form the guiding principle. The kindergarten is thus no longer an isolated school type, but is brought into line with the more recent tendencies in elementary education without any sudden gap or breach in method.

The first kindergarten was opened by Fröbel in the year 1840 in the village of Blankenburg in the Thuringian Forest. Until his death, in 1852, Fröbel gave himself up to the work of establishing other of these institutions, and of enlisting the friends of education in the cause. After his death the Baroness Marenholtz-Bülow, Fröbel's ardent disciple, devoted herself to carrying on the work, and the movement has steadily grown until kindergartens form a component part of the public-school system in most continental countries, in most cities of the United States, and in some South American and Asiatic countries. In France and French Switzerland their establishment is compulsory, and they are supported and organized like any other part of the public-school system. In Germany and England their support is yet local or philanthropic, although in England the infant schools, which form a part of the public elementary-school system, are slowly but surely being transformed and improved in accordance with the most recent developments of kindergarten principles.

The pioneer movement for the establishment of kindergartens in the United States was led by Miss Elizabeth Peabody, of Boston, who on becoming interested in Fröbel's writings went to Germany in 1867 to study his system. She returned the next year and devoted the remainder of her life to the popularizing of the Fröbelian principle of education, ably seconded by Mrs. Horace Mann and Dr. Henry Barnard. During the decade of the sixties several kindergartens were established in Boston, Mass., Hoboken, N. J., and Louisville, Ky. A similar movement was led independently in New York by Miss Henrietta Haines and Miss Boelté (Madame Kraus, q.v.), the latter a pupil of Fröbel's widow. During the seventies philanthropic associations were established in numerous cities for the support of kindergartens as charitable institutions. These were begun in Florence, Mass., in 1874, and in Boston in 1878; this movement prospered especially in San Francisco, Brooklyn, New York, Chicago, Pittsburgh, Cincinnati, and Louisville, and was supported in various other places. The first public kindergarten was opened in Boston in 1870, but shortly abandoned. The first permanently successful attempt to make the kindergarten a part of the public-school system was begun in St. Louis in 1873, under the leadership of Miss Susan Blow and Dr. W. T. Harris. Boston, Philadelphia,

Chicago, Milwaukee, and in time most of the large cities and many of the smaller ones, have followed St. Louis in this respect, usually through the absorption of free kindergartens previously established by private benevolent associations. Statistics privately collected show the number of kindergartens to have increased as follows: in 1873, 43; in 1882, 348; in 1892, 1311; in 1898, 4363; in 1903, 4000; in 1913, 8800. At the last date the 8800 kindergartens were distributed among 1105 cities and towns; of these 7600 were public schools. In 1903 the number of pupils was about 200,000; in 1913 this rose to 306,000, of whom 276,000 were in public schools. The kindergarten movement was furthered by a magazine, *The Kindergarten Messenger*, first published in 1873 by Miss Peabody. At the present time there are very many similar publications. The American Fröbel Union, established in 1867, also by Miss Peabody, was the forerunner of many such associations. The Union became the kindergarten department of the National Educational Association in 1885. Many schools for the training of kindergarten teachers have been established, either as independent enterprises or in connection with other educational institutions, chiefly normal schools. The best known of these, now connected with normal schools, are the Chicago Kindergarten College, and those in connection with the Teachers College, Columbia University, and with Pratt Institute, Brooklyn.

Bibliography. There is now a very extensive literature relating to the subject. For works by Fröbel, consult: F. W. A. Fröbel, *Gesammelte pädagogische Schriften*, edited by W. Lange (2 vols., Berlin, 1862-74; trans. in "International Education Series," New York, 1888-99); id., *Die Menschenerziehung* (Keilhau, 1826), translated by W. N. Hailman, *Education of Man*, "International Education Series," vol. v (New York, 1911); id., *Pädagogik des Kindergartens* (Keilhau, 1837-40), translated by Josephine Jarvis, *Friedrich Froebel's Pedagogics of the Kindergarten*, "International Education Series," vol. xxx (New York, 1904); id., *Mutter und Koscheder* (Vienna, 1895), translated by S. E. Blow, *Songs and Music of Friedrich Froebel's Mother Play*, "International Education Series," vol. xxxii (New York, 1901); id., *Autobiographie*, translated by Michaelis and Moore (4th ed., London, 1892); Josephine Jarvis (trans.), *Friedrich Froebel's Education by Development*, second part of the *Pedagogics of the Kindergarten*, "International Education Series," vol. xlv (New York, 1905). For general works, consult: W. N. Hailmann, *Kindergarten Culture in the Family and Kindergarten* (Cincinnati, 1873); Marenholtz-Bülrow, *The Child: Its Nature and Relations*, translated from the German by M. H. Kriege (3d ed., New York, 1877); id., *Reminiscences of Froebel*, translated by Mrs. Horace Mann (Boston, 1877); id., *Die Arbeit* (Berlin, 1886); E. L. Hailmann, *Songs and Games for the Kindergarten* (Springfield, Mass., 1887); S. E. Blow, *Symbolic Education* (New York, 1889); W. N. Hailmann, *The Law of Childhood and Kindergarten Methods in the Primary School* (Chicago, 1889); E. A. E. Shirreff, *The Kindergarten* (London, 1889); H. C. Bowen, *Froebel and Education by Self-Activity* (ib., 1892); S. E. Blow, *Symbolic Education: A Commentary on Froebel's Mother Play*, "International Education Series," vol. xxvi (New York, 1894); A. B. Hanschmann, *The Kinder-*

garten System: Its Origin and Development as Seen in the Life of Friedrich Froebel, translated by Fanny Franks (London, 1897); J. L. Hughes, *Froebel's Educational Laws* (New York, 1899); Aimée Guggenheimer, *Froebel and the Kindergarten*, New York State Library, Bulletin No. 60 (Albany, 1901); S. E. Blow, *Kindergarten Education* (ib., 1904); J. L. Hughes, *Froebel's Educational Laws for all Teachers*, "International Education Series," vol. xli (New York, 1907); K. F. Bremner, "The Infant School," in *Teacher's Encyclopædia of the Theory, Method, and Development of Education*, vol. 1 (London, 1911); V. M. Hillegar, *Kindergarten at Home: A Kindergarten Course for the Individual Child at Home* (New York, 1911); Angeline Brooks, *Theory of Froebel's Kindergarten System* (Springfield, Mass., 1912); *Reports of the Committee of Nineteen of the International Kindergarten Union on the Theory and Practice of the Kindergarten* (Boston, 1913). See FRÖBEL; MONTESSORI METHOD; NATIONAL EDUCATION, SYSTEMS OF.

KINDI, kēn'dē, AL, or **ALCHINDIUS**, al-kin'-dī-ūs, ABU YUSUF YA'KUB IBN ISHAK AL-KINDI. An Arabian philosopher, who flourished in the ninth century. He was born in Kufa, where his father was Governor under Mahdi (775-785) and Harun al-Rashid (786-809), and studied at Basra and Bagdad. His library was confiscated under Motawakkil (847-861). He wrote more than 200 treatises on almost everything within the range of the philosophy and science of his time. By the Arabs themselves he is viewed as the Peripatetic philosopher in Islam. Of his many works, but a few on medicine and astrology remain. Consult: Flügel, *Al Kindi genannt der Philosoph der Araber* (Leipzig, 1857); A. Nagy, *Die philosophischen Abhandlungen des al-Kindi* (Münster, 1897); De Boer, *Geschichte der Philosophie im Islam* (Stuttgart, 1901).

KINEALY, kī-nē'li, JOHN HENRY (1864-). An American mechanical engineer. He was born at Hannibal, Mo., and was educated in the public schools of St. Louis and at Washington University (M.E., 1884), where he was an instructor in 1886-87 and professor of mechanical engineering from 1892 to 1902. He taught also at the Agricultural and Mechanical College of Texas (1887-89) and at the North Carolina College of Agriculture and Mechanical Arts (1889-92). He was a consulting engineer at Boston in 1902-04 and thereafter a mechanical engineer and patent expert at St. Louis. His own patents include an air-purifying apparatus, a thermal valve, a damper regulator, and other devices using the Kinealy metal diaphragm. He published: *An Elementary Text-Book on Steam Engines and Boilers* (1895; 4th ed., 1903); *Charts for Low Pressure Steam Heating* (1896); *Formulas and Tables for Heating* (1899); *Slide Valve Simply Explained* (1899); *Centrifugal Fans* (1905); *Mechanical Draft* (1906).

KINEMACOLOR, kin'-ē-mā-kūl'ēr. A method for the projection in color of moving pictures. See MOVING PICTURES.

KIN'EMATICS (from Gk. κίνημα, *kinēma*, movement, from κινεῖν, *kinēin*, to move). That branch of mechanics which treats of different kinds of motion entirely regardless of the idea of matter and its inertia. It is therefore, strictly speaking, a department of geometry. See MECHANICS.

KING (AS *cuning*, OHG *kuning*, Ger. *König*; probably connected with Goth. *kuni*, OIIG. *kunni*, AS. *cynn*, Eng. *kin*, race, family, and ultimately with Lat. *gens*, Gk. *γένος*, *genos*, Ir. *cine*, Skt. *jana*, race, family, people, from *jan*, to beget). The title of a ruler vested with supreme authority over a state, nation, or tribe. In early times the king was the chief source of all authority. He was responsible only to God, of whom he was the earthly representative, and his person was sacred. The tenure of the crown was usually hereditary and was claimed by divine right, although occasionally it was elective within certain limits, as among the early Germans, where the chief qualification for the kingship was ability to lead the warriors in battle. With the growth of the feudal system the character of the kingship changed. In Germany the royal power was largely usurped by the feudal lords. In France, on the other hand, the king was able to overcome the feudal nobility. With the constitutional development of modern times the feudal king and the absolute king of the mediæval age have given way to the constitutional king, whose prerogatives are limited by the precepts of a written constitution or custom. At present all the continental European countries have written constitutions which place limitations upon the royal power. Another important modification of the kingship effected by the constitutional development of the last century is its relegation from a position of sovereign power to a position as an organ of government merely. That is to say, the European kingship is no longer a sovereignty, but an office, the powers of sovereignty which formerly were vested in the king having been largely withdrawn and conferred upon the national legislative body. In the third place, the kingship has become more generally elective than formerly. By this is meant the power of the legislature, now generally recognized, to depose unworthy kings and designate their successors. In most of the Euro-

pean constitutions the crown is described as hereditary. In England the law of succession is lineal primogenial, with preference for males over females. In the Netherlands and Spain essentially the same rule prevails. In Belgium, Norway and Sweden, and Prussia it is agnatic lineal primogenial, with absolute exclusion of females; in Austria-Hungary it is the same, except that in default of male heirs females may succeed. The age at which the king attains his majority is usually 18, although in Austria-Hungary it is 16. During the minority of the king, or when for any reason he is unable to exercise the royal prerogatives, a regent is appointed, who is vested with the royal power. The only qualifications required of European kings relate to the profession of religious faith. Thus, in England the sovereign must be a Protestant, in Norway and in Sweden a Lutheran, and in Austria-Hungary a Roman Catholic. By the ceremony of coronation a semisacred character is communicated to the royal person which symbolizes his inviolability and supremacy. Among the qualities which attach to the crown are inviolability, immaculateness, irresponsibility (for the conduct of political affairs), and immortality. It is a common maxim that the king can do no wrong; therefore his ministers who countersign his official acts assume the responsibility for his conduct. By the quality of immortality is meant the immediate transmission of the crown upon the death of the wearer to his successor without interruption or interregnum. In general, the powers of the king include the appointment to office; the disposition of the land and naval forces; the calling, opening, proroguing, adjourning, and dissolving of the parliamentary bodies, the approval or rejection of legislative measures; the appointment and dismissal of ambassadors and ministers; the negotiation of treaties; and the issue of administrative regulations and proclamations of various kinds. The crown is also the source of clemency and pardon. In several of the European countries, besides Germany, the royal crown was formerly for a long period elective: these were Hungary, Bohemia, and Poland. Consult Frazer, *Lectures on the Early History of the Kingship* (London, 1905), and F. A. Woods, *Influence of Monarchs* (New York, 1913).

KING. A Chinese musical instrument. See CHINESE MUSIC.

KING, ALBERT FREEMAN AFRICANUS (1841-1914). An American physician, born in England, the son of Dr. Edward King. He graduated at Columbian (now George Washington) University in 1861 and received his medical degree from the University of Pennsylvania in 1865. He was professor of obstetrics in the Medical School of George Washington University from 1871 to 1913 and was also professor of obstetrics at the University of Vermont (1871-1913), and was president of the Washington Obstetrical and Gynecological Society in 1885-87. He wrote a *Manual of Obstetrics* (1882; 11th ed., 1910); *Effect of Ultra-Violet Rays on Malarial Fever* (1902). He urged with enthusiasm the theory of the mosquito transmission of malaria, a claim which, republished in 1883, was accepted in 1899 by the medical world as correct; and he was the first to advocate measures for personal and municipal use in the way of prevention. See INSECTS, PROPAGATION OF DISEASE BY.

KING, (WILLIAM BENJAMIN) BASIL (1859-). An American novelist. He was born at Charlottetown, Prince Edward Island, Canada, and was educated there and at King's College, Windsor. Later he made his home in Cambridge, Mass. Devoting himself to authorship after 1900, he published *Griselda* (1900); *Let not Man Put Asunder* (1901, 1902); *In the Garden of Charity* (1903); *The Steps of Honor* (1904); *The Giant's Strength* (1907); *The Inner Shrine* (1909), long anonymous and very popular; *The Wild Olive* (1910); *The Street Called Straight* (1912); *The Way Home* (1913); *The Letter of the Contract* (1914). Most of his books appeared in a low-priced edition in 1914.

KING, CHARLES (1789-1867). An American editor and educator, born in New York City, the son of Rufus King (1755-1827). He was educated at Harrow, England, and in Paris, returned to New York in 1806, and was elected to the New York Legislature in 1813. He was associate editor, with Verplanck, of the *New York American* (a conservative newspaper) from 1823 to 1827 and was sole editor from 1827 to 1845. From 1849 until 1863 he was president of Columbia College, during which period the School of Medicine was reestablished and the School of Mines organized.

KING, CHARLES (1844-). An American soldier and novelist, born at Albany, N. Y. He graduated from West Point in 1866, served in the 3d Cavalry, and was retired as captain for wounds received in action (1879), was inspector and instructor of the Wisconsin National Guard (1882-89), colonel (1890), adjutant general (1895), and brigadier general, United States volunteers (1898). He afterward served in the Philippines. His histories, stories, and sketches are largely concerned with military matters. His 50-odd published books include: *Famous and Decisive Battles* (1884); *Campaigning with Crook* (1890); *Between the Lines* (1889); *The Colonel's Daughter* (1883); *Marion's Faith* (1885); *Captain Blake* (1892); *Under Fire* (1894); *Ray's Daughter* (1900); *A Tame Surrender* (1901); *The Medal of Honor* (1905).

KING, CLARENCE (1842-1901). An American geologist, born in Newport, R. I. He graduated at the Sheffield Scientific School of Yale in 1862, and the following year set out with a single companion on a trip across the continent. He arrived in California after accomplishing the last part of his journey on foot and became attached as assistant to the Geological Survey, then directed by J. D. Whitney. His investigations at this time included the determination of the age of the gold-bearing rocks, surveys of Mount Whitney and the Yosemite valley, and the collection of evidence in support of the glaciation of the Sierras. In 1867, upon his recommendation, Congress provided for the geological survey of a belt of country including the fortieth parallel and extending across the Rocky Mountains. This survey, which laid the foundation for future geological investigations by the government, was successfully carried out by King during the years 1867-72. The value of his services to science in this connection received merited recognition when, in 1879, he was appointed the first director of the United States Geological Survey. Owing to ill health, he resigned the office of director in 1881, but during his brief tenure the Survey rendered

valuable assistance both to science and to the development of the mining industry of the country. The investigations of the Comstock Lode and of the Eureka and Leadville districts have had an important influence upon the study of economic geology. From 1881 until his death he practiced as a mining engineer and engaged in various scientific investigations. The most important of his publications are: *Mountaineering in the Sierras* (1871, 1902); "On the Discovery of Actual Glaciers on the Mountains of the Pacific Slope," in *American Journal of Science* (1871), *Systematic Geology* (1878); and "The Age of the Earth," in *American Journal of Science* (1893). The last-mentioned paper is a very valuable contribution to the study of the earth.

KING, DAN (1791-1864). An American physician, born in Mansfield, Conn. He studied medicine there, practiced at Preston, Conn., and afterward removed to Charlestown, R. I. Dr. King was actively interested in political affairs of Rhode Island and served in the State Legislature from 1828 to 1834. He supported the suffrage movement, of which Thomas Wilson Dorr became the head; but he did not sanction Dorr's headlong conduct after the suffrage party had failed to get control of the Legislature. The Narragansett Indians, who were in a reduced condition, found an earnest helper in Dr. King. As a joint commissioner for the State, he investigated the condition of the Indians, and his report resulted in the establishment of an Indian school. His publications include *A Life and Times of Thomas Wilson Dorr* (1859).

KING, EDWARD (1612-37). An English poet, the subject of Milton's *Lycidas*, born in Ireland. He studied at Christ's College, Cambridge, in 1626-30, was elected a fellow there in the latter year, and while at the university became a close friend of Milton. When King lost his life in a shipwreck off the Welsh coast, 13 poems by his friends at Cambridge were published under the title *Obseques to the Memory of Mr. Edward King* (1638), and it was in this volume that *Lycidas* appeared. King himself wrote a number of Latin poems.

KING, EDWARD (1829-1910). An English theologian and bishop, born at Westminster. He graduated B.A. from Oriel College, Oxford, in 1851, having become a Tractarian; was ordained priest in 1855 and served as curate at Wheatley, Oxfordshire. In 1858 Bishop Wilberforce appointed him chaplain of Cuddesdon College and in 1863 principal, and 10 years later he became canon of Christ Church and professor of pastoral theology at Oxford. King held firmly to his High Church views, and within four years of the date (1885) when Gladstone appointed him Bishop of Lincoln, he was tried before the Archbishop of Canterbury for certain ritualistic practices which the Church Association claimed were not in accord with the laws of the Church. The Archbishop's decision on the whole favored King. Especially in his pastoral work and as an influence among young men, Dr. King was notably successful. In 1909 he was the only Bishop in the House of Lords who supported Lord Lansdowne's amendment to the budget. (See LLOYD-GEORGE; LANSDOWNE, fifth MARQUIS OF.) His writings include *Meditations on the Last Seven Words* (1874) and, published after his death, *The Love and Wisdom of God: A Collection of Sermons* (1910); *Spiritual Letters* (1910); *Counsels to Nurses*

(1911); *Duty and Conscience—Being Retreat Addresses* (1911); *Sermons and Addresses* (1911).

KING, EDWARD (1848-96). An American journalist, born at Middlefield, Mass. At 17 he began newspaper work in Springfield and soon after (1867) was sent to Europe as special correspondent of the *Springfield Republican*, whose literary editor he became on his return. In 1869 he returned to Europe as newspaper correspondent, reporting the Franco-German War and the Paris Commune. In 1872 he made a journey through the South in behalf of *Scribner's Monthly*, traveling 25,000 miles. The literary result of this journey was *The Great South* (1875). He returned to Europe in 1875 and afterward lived chiefly in Paris as a journalist, but died in Brooklyn, N. Y. The more important of his books are: *French Political Events 1871-72*; *Europe in Storm and Calm* (1885); *Kentucky's Love* (1872); *A Venetian Lover* (1887), poems, *The Gentle Savage*, a novel (1888). His lyrics are collected in *Echoes from the Orient* (1880).

KING, EDWARD, VISCOUNT KINGSBOROUGH (1795-1837). An Irish writer on the antiquities of Mexico. Eldest son of the third Earl of Kingston, his own title was one of courtesy. He studied at Oxford (1814-18), but did not graduate. He was a member of Parliament (1818-26), but resigned his seat to his brother Robert. His great work on the *Antiquities of Mexico* (1830-48), in nine splendid volumes, was undertaken to prove the settlement of Mexico by the 10 lost tribes of Israel. The story goes that a Mexican manuscript in the Bodleian Library first interested him in the subject, and that Sir Thomas Phillipps urged him to the work. It is certain that he sank his whole fortune in it. Bankrupt, he was sued by a paper manufacturer, and died of typhus in the debtors' prison at Dublin.

KING, GRACE ELIZABETH (1859-). An American author of stories and historical sketches. She was born and educated in New Orleans. Her sketches first attracted attention in the *New Princeton Review* and were the basis of her novel *Monsieur Motte* (1888). Her special knowledge of the French culture of New Orleans is apparent in her fiction. Her later works include *Tales of Time and Place* (1892); *Earthlings* (1888); *New Orleans: The Place and the People* (1895); *Jean Baptiste Lemoyne, Founder of New Orleans* (1892); *Balcony Stories and A History of Louisiana* (1893); *De Soto and his Men in the Land of Florida* (1898); *Stories from Louisiana History* (1905).

KING, HENRY CHURCHILL (1858-). An American theologian and college president, born at Hillsdale, Mich. He graduated from Oberlin College in 1879 and from Oberlin Theological Seminary in 1882. At Oberlin he was associate professor of mathematics (1884-90) and of philosophy (1890-91), professor of philosophy (1891-97) and of theology after 1897, dean (1901-02), and president of the college after 1902. He lectured at Yale (1907), Harvard (1909), and Columbia (1913) universities and in India, China, and Japan in 1909-10. He was president of the Religious Education Association in 1907-08 and of the Ohio College Association in 1907-09. He is author of *An Outline of Erdmann's History of Philosophy* (1892); *Outline of the Microcosmus of Hermann Lotze* (1895); *The Appeal to the Child* (1900; 3d ed.,

1905); *Reconstruction in Theology* (1901); *Theology and the Social Conscience* (1902); *Personal and Ideal Elements in Education* (1904); *Rational Living* (1905); *Letters on the Greatness and Simplicity of our Christian Faith* (1906; rev. ed., 1909); *The Seeming Unreality of the Spiritual Life* (1908); *The Laws of Friendship, Human and Divine* (1909; new ed., 1914); *The Ethics of Jesus* (1910); *The Moral and Religious Challenge of our Times* (1911); *Religion as Life* (1913).

KING, HELEN DEAN (1869-). An American biologist. Born at Owego, N. Y., she graduated from Vassar College in 1892 and in 1899 received her doctorate in philosophy from Bryn Mawr College, where she was fellow and student assistant in biology from 1897 to 1904. She taught physiology at Miss Baldwin's School, Bryn Mawr, from 1899 to 1907, was research fellow at the University of Pennsylvania in 1906-08, and served as assistant in anatomy in 1908-09 and as associate after 1909 at the Wistar Institute. She was also an assistant at Woods Hole, Mass. Her investigations deal largely with problems of sex determination.

KING, JAMES MARCUS (1839-1907). An American Methodist Episcopal clergyman, born at Girard, Pa. He graduated from Wesleyan University in 1862 and for six years was a professor in the Fort Edward Collegiate Institute, of which his brother, the Rev. Joseph E. King, was president for 59 years. In 1866 he entered the ministry of the Methodist Episcopal church, joining the Troy conference, and later being transferred to the New York conference. In 1899 he was assistant corresponding secretary, and in 1900-07 secretary, of the Methodist board of church extension, and the first corresponding secretary of the board of home missions and church extension. He was a delegate to the ecumenical conferences of 1881, 1891, 1901, and chairman of the executive committee of the Evangelical Alliance in the United States. From 1889 to his death he was secretary of the League for the Protection of American Institutions. He was the author of *Facing the Twentieth Century—Our Country: Its Power and Peril* (1899).

KING, JOHN ALSOP (1788-1867). An American politician, Governor of New York in 1857-59. He was born in New York City, whither his father, Rufus King (q.v.), had removed from Massachusetts. He was educated at Harrow, England, and in Paris. Returning to New York, he was admitted to the bar and practiced up to the outbreak of the War of 1812, in which he served as an officer of the New York State militia. After the war he established himself on a farm at Jamaica, L. I. He was a member of the State Assembly in 1819-21 and of the State Senate in 1823-25. In 1825 he went as Secretary of Legation to England with his father, who had been appointed by President John Quincy Adams Minister to the court of St. James' for a second time, and, on his resignation on account of ill health in 1826, remained in London until the appointment of a successor, as chargé d'affaires. After serving three more terms in the New York Legislature (1832-33; 1838-39; 1840-41), he was in 1848 elected as a Whig to the Thirty-first Congress (1849-51), in which he vigorously opposed Clay's compromise measures. In 1855 he presided at the Syracuse (N. Y.) Convention of the Republican party, with which he was thence-

forth associated. In 1856 he was a delegate to the Republican Convention at Philadelphia, and in 1857-58 was Governor of New York State. He was a Lincoln elector in 1860 and a member of the Peace Convention (q.v.) in 1861.

KING, JOHN EDWARD (1858-). An English classical philologist and educator, born at Ash, Somerset. He was educated at Clifton College, Bristol, and at Lincoln College, Oxford, of which he was fellow in 1882. Subsequently he was assistant master of St. Paul's School (1884-87), tutor of Lincoln College (1887-91), high master of Manchester Grammar School (1891-1903), head master of Bedford Grammar School (1903-10), and then head master of Clifton College. He published *The Principles of Sound and Inflection, as Illustrated in the Greek and Latin Languages* (1888), with C. Cookson, and *Comparative Grammar of Greek and Latin* (1890).

KING, JONAS (1792-1869). An American missionary. He was born at Hawley, Mass., July 29, 1792; graduated from Williams College (1816) and Andover Seminary (1819), and engaged in home mission work. To prepare himself for the foreign field, he studied Arabic in Paris under De Sacy. From 1822 till 1828 he held the position of professor of Oriental languages in Amherst College, but during the years 1823-27 was a missionary in Egypt and Palestine. In 1828 he went to Greece, where his missionary labors at first met with much success. Later he aroused the hostility of the Greek church, was several times tried on charges of reviling religion and the church, and even brought in danger of his life. He died at Athens, May 22, 1869. His miscellaneous works in Greek were published at Athens (1859-60). In English he wrote *The Oriental Church and the Latin* (1865). Consult his life by F. E. H. H. (New York, 1879).

KING, LEONARD WILLIAM (1869-). An English Semitic scholar. He was born in London and was educated at Rugby and at King's College, Cambridge. In 1903-04 he made excavations at Nineveh for the British Museum and collected valuable Oriental rock inscriptions. He became lecturer in Assyrian at King's College, London, and assistant keeper of Egyptian and Assyrian antiquities in the British Museum, for which he prepared a *Guide* (1900, 2d ed., 1908, with Budge). Among his more important works are: *Babylonian Magic and Sorcery* (1896); *Cuneiform Texts in the British Museum* (1896-1914); *Assyrian Chrestomathy* (1898); *Letters and Inscriptions of Hammurabi* (1898-1900); *Babylonian Religion and Mythology* (1899); *Assyrian Language* (1901); *Annals of the Kings of Assyria* (1902); *Inscription of Darius on the Rock of Behistun* (1907), with R. C. Thompson; *Egypt and Western Asia in the Light of Recent Discoveries* (1906), with H. R. Hall; *Studies in Eastern History* (1904-07); *A History of Sumer and Akkad* (1910); *Boundary Stones and Memorial Tablets in the British Museum* (1912).

KING, LIDA SHAW (1868-). An American classical scholar and college dean. Born in Boston, she graduated from Vassar College in 1890 and from Brown University (A.M.) in 1894 and continued her graduate studies at Vassar (1894-95), Radcliffe (1897-98), Bryn Mawr (1899-1900), and at the American School of Archaeology, Athens, Greece (1900-01). She taught the classics at Vassar (1894-97) and at

the Packer Collegiate Institute (1898-99, 1901-02), and at Brown was assistant professor of classical philology (1905-09), dean of the Women's College after 1905, and professor of classical literature and archaeology after 1909. She made contributions to the *American Journal of Archaeology*.

KING, PHILIP PARKER (1793-1856). A British naval officer and hydrographer, born on Norfolk Island in the Pacific. He entered the service when 14 years old and was lieutenant aboard the *Trident* in 1814. Three years afterward he was intrusted with an important survey, which occupied him five years and resulted in the marking of an improved route between the Torres Strait and Sydney, and in the publication of *King's Narrative of the Survey of the Intertropical and Western Coasts of Australia* (2 vols., 1827), for which he was made an honorary fellow of the Royal Society. His charts, which have been widely used, were issued by the Admiralty Hydrographic Department in 1825. In command of the *Adventure*, accompanied by the *Beagle*, commanded by Capt. Robert Fitzroy, he spent four years (1826-30) in making charts of the southern coast of South America, and on his return published *Sailing Directions to the Coasts of Patagonia*. He also wrote the second volume of the *Voyages of the Adventure and the Beagle* (3 vols., 1839), the other volumes of which were written by Robert Fitzroy and Charles Darwin. King retired to Sydney, New South Wales, became a legislative councillor, manager of the Australian Agricultural Society, and rear admiral on the retired list (1855), he being the first Australian to attain this rank.

KING, PRESTON (1806-65). An American political leader and legislator, born in Ogdensburg, N. Y. He graduated at Union College in 1827, was admitted to the bar, and began practice in St. Lawrence County. In 1830 he founded and became editor of the *St. Lawrence Republican*, the principal organ of the Jackson party in northern New York State. As a reward for his services, President Jackson appointed him in 1833 postmaster at Ogdensburg. In 1834 he was elected to the New York Assembly, being reelected for three successive terms. In 1843-47 he served in the U. S. House of Representatives, but from 1849 to 1853 was again a member. From 1857 to 1863 he was a Republican member of the Senate. In 1864 he was a delegate to the Republican Convention at Baltimore, where he was one of those who brought about the nomination of Andrew Johnson for the vice presidency—a service which the latter, when he became President, rewarded by appointing King collector of the port of New York. King committed suicide by jumping from a Hudson River ferryboat on Nov. 12, 1865, while temporarily insane.

KING, RUFUS (1755-1827). An American political leader, born March 24, 1755, at Scarborough, Me. He graduated at Harvard in 1777, read law with Chief Justice Theophilus Parsons, and was admitted to the bar in 1780, his studies being interrupted for a brief period in 1778, when he served as an aid to General Glover in the Rhode Island expedition. In 1783 he took his seat in the General Court of Massachusetts, to which he was several times reelected, and he became a member of the Continental Congress in December, 1784, being reelected in 1785 and 1786. He there introduced in March, 1785, a

resolution prohibiting slavery in the Northwest Territories. The substance of this resolution was subsequently incorporated by his colleague, Nathan Dane, into the famous Ordinance of 1787 (q.v.). He took a prominent part in the proceedings of the Convention of 1787 which framed the Federal Constitution, and in the Massachusetts Convention called to decide upon the adoption or rejection of that instrument he was instrumental in securing ratification. In 1786 he married Mary Alsop, daughter of John Alsop, and in 1788 removed to New York City, where he was elected to the State Assembly in 1789, and in the same year was elected to the United States Senate, where he at once took a high place as a leader of the Federalists. King was reelected in 1795, and in 1796 he accepted from President Washington, who had previously offered him a place in his cabinet as Secretary of State, the responsible post of Minister to England. He distinguished himself highly in the diplomatic service, in which he continued until 1803. In the year following his return he was mentioned as candidate for the Senate, and for Governor of New York, and as the Federalist candidate for Vice President received 14 votes. Again in 1808 he was the Federalist candidate for the same office, receiving 47 votes. In 1813 and again in 1819 he received the honor of an election to the United States Senate by a Legislature a majority of which was Republican. During the war with England he did not side with the extreme Federalists, but supported the administration in such measures as seemed to him to be for the general good. Nevertheless, in 1816, the few Federalist electoral votes for President were cast for him. In 1825-26 he was again Minister to England. He died April 29, 1827. Consult C. R. King, *Life and Correspondence* (6 vols, New York, 1894-1900).

KING, RUFUS (1814-76). An American soldier and journalist, born in New York City, son of Charles King, president of Columbia College, and grandson of Rufus King. He graduated at West Point in 1833, but three years later resigned from the army and became an assistant engineer on the New York and Erie Railroad. In 1839 he went to Albany, where he became editor of the *Advertiser*, and Adjutant General of the State of New York, in virtue of which latter office he commanded the troops called out to suppress the anti-rent riots. For four years after 1841 he was associate editor of the *Albany Evening Journal*, and then for 16 years was editor and part proprietor of the *Milwaukee Sentinel and Gazette*, which during this time became the leading newspaper in Wisconsin. King was appointed by Lincoln Minister to the Pontifical States in 1861, but just as he was about to embark for Rome came the news of the firing on Fort Sumter, whereupon he resigned his post and applied for an appointment in the military service. He was at once commissioned brigadier general of Wisconsin volunteers and later was transferred with the same rank to the United States volunteers and was placed in command of the Iron Brigade. His division met two of Jackson's divisions at Groveton on Aug. 28, 1862, and repulsed them, and on the following two days took part in the second battle of Bull Run. He was compelled by ill health to resign on Oct. 20, 1863, and was immediately reappointed Minister to the Pontifical States. When this post was abolished by Congress in

1867 he returned to the United States and became deputy collector of customs for the city of New York.

KING, SAMUEL ARCHER (1828-1914). An American aeronaut, born near Philadelphia. In 1849 he began making balloons, and in 1851 he made his first ascension at Philadelphia. He made ascensions at the Centennial (1876) and at the World's Columbian (1893) expositions. Altogether during his life he made more than 400 ascensions for pleasure, for scientific purposes, and for obtaining bird's-eye photographs of cities in many parts of the United States. His last trip was made when he was nearly 80 years old.

KING, THOMAS STARR (1824-64). An eminent Unitarian clergyman. He was born in New York City, Dec. 17, 1824, studied theology while employed as a teacher, and in 1846 became pastor of a church in Charlestown, Mass., which his father had formerly served. In 1848 he removed to Boston, where he was pastor of the Hollis Street Church. He gained wide popularity as a lecturer, in which capacity he found constant employment from 1845 to 1860. In the latter year he received a call to the only Unitarian church in San Francisco and began his ministrations there in the summer. When the Rebellion broke out, King exercised a powerful influence in favor of the national government against the large Southern element among the people of California, who wished to form an independent republic in California. During the war he was active in soliciting aid for the United States Sanitary Commission, and to him was chiefly due the splendid gift of California to that cause. He died at San Francisco, March 4, 1864. He wrote *The White Hills: Their Legends, Landscapes, and Poetry* (1859), and contributed frequently to reviews and other periodicals. After his death three volumes of his lectures, etc., were published, one of them, *Christianity and Humanity*, with memoir by E. P. Whipple (Boston, 1877). One of the peaks of the White Mountains has been named Starr King in his honor. Consult E. P. Whipple, "Memoir of Thomas Starr King," in *Christianity and Humanity* (Boston, 1877), and *American Literature and Other Papers* (ib., 1887).

KING, WILLIAM (1663-1712). An English author, born in London. From Westminster School he went to Christ Church, Oxford, where he graduated in 1685. Five years afterward he made his literary debut with an entertaining *Dialogue Showing the Way to Modern Preferment*, which favored the High Church Tory party. Through his *Animadversions* (1694) in defense of the Danish government he was made secretary to the Princess Anne, while his *Journey to London in the Year 1698* and *Dialogues of the Dead* (1699) established his reputation as a caustic but humorous critic. He published other satirical *Dialogues* and had different appointments—judge of the Admiralty Court in Ireland (1701), Vicar General of Armagh (1703), and keeper of the records at Dublin Castle (1707)—but he was of an indolent temperament, and careless about the publication of his writings, which were collected and edited by John Nichols after his death (3 vols., 1776). The best of the contents is *The Art of Cookery* (1708), a poem imitating *The Art of Poetry* by Horace, though *The Art of Love* (1709), a parody called *Useful Transactions in Philosophy, and Other Sorts of Learning* (1709), and

a school book, *Historical Account of the Heathen Gods and Heroes* (1710), are also noteworthy. A memoir of King was prefixed to the Nichols edition of the *Original Works* (1776).

KING, WILLIAM FREDERICK (1854-1916). A Canadian surveyor and astronomer. He was born at Stowmarket, Suffolk, England. In early youth he came to Canada with his parents and was educated at Toronto University. After employment for some years on Dominion land surveys in the Northwest he entered government service as an inspector of surveys, becoming chief inspector in 1886. In 1890 he was appointed chief astronomer of the Department of the Interior, in 1905 director of the Dominion Astronomical Observatory, Ottawa, and in 1909 superintendent of the Geodetic Survey of Canada. He was appointed Royal Commissioner for the international boundary between the United States and Canada under the several treaties relating thereto and in 1904-07 was a member of the International Waterways Commission. In 1906 he was made honorary president of the Royal Astronomical Society of Canada and in 1911 was president of the Royal Society of Canada. In 1908 he was made a C.M.G. He published *Astronomy in Canada* and many other scientific papers.

KING, WILLIAM LYON MACKENZIE (1874-). A Canadian statesman and economist. He was born at Berlin, Ontario, and was educated at Toronto, Chicago, and Harvard universities. He was a member of the editorial staff of the *Toronto Globe* (1895-96), a special Dominion commissioner to inquire into the carrying out of government contracts in Europe and Canada (1898-1900), instructor in political economy in Harvard University (1900), and Deputy Minister of Labor (1900-08). In 1908 he was elected a Liberal member of the House of Commons and in 1909 was appointed Minister of Labor in the Laurier cabinet, resigning on the defeat of the latter in 1911. King, whose grandfather was William Lyon Mackenzie (q.v.), devised the Canadian Industrial Disputes Investigation Act. He served as government conciliator in a large number of industrial strikes, was chairman of the Royal Commission to inquire into conditions of employment of telephone operatives (1907), a Royal Commissioner to assess losses of Japanese residents in anti-Asiatic riots at Vancouver, British Columbia (1908), and concerning conditions of employment among cotton operatives (1908). He was a delegate to the International Opium Commission, Shanghai, China (1909), to the International Social and Industrial Congress at The Hague (1910), and to the International Peace Conference, Lake Mohonk, N. Y. (1911). In 1914 he was appointed to conduct, in behalf of the Rockefeller Foundation, extensive researches into the relations between labor and capital. He was made a member of the American Economic Association, and a fellow of the Royal Society of Canada (1910). The decoration of C.M.G. was conferred upon him in 1906.

KING, WILLIAM RUFUS (1786-1853). An American statesman. He was born in Sampson Co., N. C., graduated at the University of North Carolina in 1803, and studied law at Fayetteville, where he was admitted to the bar in 1806. In the same year he was elected to the State Legislature, serving until his election, as a Democrat, to the Federal House of Representatives in 1810. There he remained until

he resigned, on Nov. 4, 1816, supporting the administration's war policy and receiving in the latter year the position of Secretary of Legation at St. Petersburg. In 1818, he settled as a cotton plant on the Alabama Co., Ala., was a member of the convention which drew up the constitution for the proposed State in that year, and after its admission in 1819 took his seat (on December 14) in the United States Senate as one of the first Senators from Alabama. He remained in the Senate by reelection until 1844, serving after 1838 as President pro tempore. His resignation (April 15, 1844) enabled him to accept an appointment as Minister to France. While holding this post, he is said to have prevented a French protest against the annexation of Texas. Recalled at his own request in September, 1846, he was appointed to fill a vacancy in the Senate, took his seat on July 13, 1848, was elected for the ensuing term, and served until his resignation, in January, 1853. In 1850-52 he had again been President pro tempore. In 1852 King, who had been a candidate for the Democratic nomination for the vice presidency ever since 1840, was finally named for that office on the Pierce ticket and was elected. Before the inauguration, however, his health began to fail rapidly, and he went to Havana, Cuba, where by special act of Congress he was allowed to take the oath of office on March 4, 1853. He never entered upon the duties of his office, however, but died shortly after his return to Alabama in the following April.

KING-AT-ARMS, or **KING-OF-ARMS**. The title of the principal heraldic officer of any country. There are four in England, of whom three (Garter, Clarenceux, and Norroy) form the College of Heraldry. The fourth is Bath king-at-arms.

Garter principal king-at-arms was instituted by Henry V (1417 A.D.) for the service of the Order of the Garter. His duties include the regulations of the arms of peers and of the Knights of the Garter. In the capacity of king-at-arms of the Order of the Garter, he has apartments within the castle of Windsor, and a mantle of blue satin, with the arms of St. George on the left shoulder, besides a badge and sceptre. His official costume, as principal king-at-arms of England is a surcoat of velvet, richly embroidered with the arms of the sovereign, a crown, and a collar of SS. Clarenceux and Norroy have jurisdiction to the south and north of the Trent respectively. They arrange and register, alone or conjointly with Garter, the arms of all below the rank of the peerage. Kings-at-arms were formerly entitled to wear crowns on all occasions when the sovereign wore his; now they assume them only at the ceremony of a coronation. Their installation anciently took place with great state and always on a Sunday or a festival day, the ceremony being performed by the King, the Earl Marshal, or some other person duly appointed by royal warrant. Bath, though not a member of the college, takes precedence of Clarenceux and Norroy. His office was created in 1725, for the service of the Order of the Bath, when it was instituted by George I and he was constituted Gloucester king-at-arms.

The chief heraldic officer for Scotland is called Lyon king-at-arms (q.v.), who since the Union has ranked next to Garter. His title is derived from the lion rampant in the Scottish royal

insignia, and he holds his office immediately from the sovereign, and not, as the English king-at-arms, from the Earl Marshal. Before the revolution he was crowned by the sovereign or his commissioner on receiving his office.

There is one king-at-arms in Ireland, named Ulster. The royal ordinance relative to the Order of St. Patrick, issued May 17, 1833, declares that in all ceremonials and assemblies Ulster shall have place immediately after the Lyon. Consult Fox-Davies, *Complete Guide to Heraldry* (London, 1909).

KING AUK. In Scandinavia, the little auk. See DOVEKIE.

KINGBIRD. One of the most useful and interesting of the American tyrant flycatchers (*Tyrannus tyrannus*). The bird is less than 9 inches in length, and its plumage is grayish slate color above and white beneath; but concealed on the very top of its head it has an erectile patch of vermilion feathers surrounded by white and orange.

The notes of the kingbird are not musical, but are vigorous and attractive, though often petulant. Some observers claim that during the breeding season the male gives utterance to a soft and very pleasing song, but, as he lacks the vocal apparatus of a true song bird, this statement is doubtful. The food of this flycatcher is insects captured on the wing, including bees, whence the bird is often known as the bee martin. The kingbird occurs throughout North America during the summer and is abundant in the East as far north as New Brunswick and common in the Middle West up to Manitoba, but rare west of the Rocky Mountains. In September it migrates to Central and South America, where it remains all winter, returning in season to reach its breeding limits early in May. The nest is a well-built structure on the end of a branch, often of an apple tree; it is composed mainly of weed stalks, grasses, and rootlets, with moss, plant down and the like in the lining. The eggs, four or five in number, are very handsome, creamy white, sharply spotted with umber brown.

Several relatives of the western part of the United States and the countries southward are often called kingbirds, each designated by some differential name, as the Arkansas kingbird (*Tyrannus verticalis*) of the Southwestern States, Cassin's kingbird (*Tyrannus vociferans*) of the Rocky Mountain region, and the gray kingbird (*Tyrannus dominicensis*) of Florida and the West Indies.

The great-crested flycatcher (*Myiarchus crinitus*) is a related species, common and conspicuous through the eastern United States, where it is easily recognized by its brave aspect, large crest, and loud but not unmusical cry. Its plumage is olivaceous above, browner on the head, throat ash gray, abdomen yellow. It is remarkable for almost invariably weaving into its rough nest, which is usually placed in some niche or hollow in a decaying tree stem, the cast skins of one or more snakes, and also for the peculiar beauty of its eggs, which are buff brown, covered with irregular lengthwise lines as if scratched with a fine pen. See Plate of TYPICAL FLYCATCHERS, with the article FLYCATCHER, and Colored Plate of EGGS of SONG BIRDS.

The kingbird of India and the East is a drongo (q.v.).

KING CERO. See CERO.

KING CHARLES LAND, or KUNG KARL LAND. A name often but erroneously given to the little-known group of islands which are situated to the east of Spitzbergen. The more easterly of the two large islands of the group, properly called King Charles Island, is in lat. 79° N., long. 28° E. See WYCHE'S ISLAND.

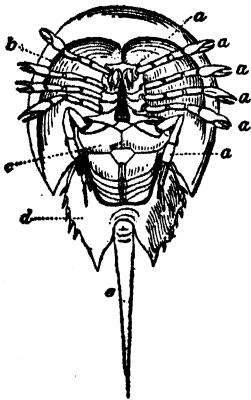
KING CHARLES SPANIEL. See SPANIEL.

KING COBRA. See HAMADRYAD.

KING COLE. See COLE, KING.

KING CONCH. A local name in Florida of *Strombus gigas*. See CONCH, and cf. QUEEN CONCH.

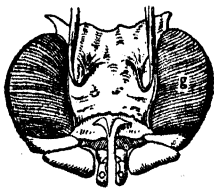
KING CRAB. A large, singular crustacean-like animal of the genus *Limulus*, also called horseshoe and helmet crab. It is, with four other species living in the tropical regions of eastern Asia from Japan to the East Indian Archipelago, the sole surviving representative of a large group (Merostomata, q.v.) which dates from Cambrian times. The king crab of the northeastern American coast is a large animal, sometimes nearly 2 feet in length, including the caudal spine. Its body is formed of two regions, the head and abdomen or hind body, the caudal spine being a modification of the ninth or last abdominal segment. The large, broad, lunate head is in general shape like a horse's hoof; hence the local name given the animal. It is composed of six fused segments and bears six pairs of legs, ending in forceps, corresponding in position to the antennæ, jaws, and maxillæ of the lobster or crab. On each side of the head are two compound eyes, lunate in shape, the surface of which is smooth, while there is a pair of minute simple eyes situated, one on each side of a low conical spine in the middle near the front edge. The



VENTRAL VIEW OF LIMULUS.

a, a, appendages of head; b, head (buckler); c, operculum, behind which are seen the other abdominal appendages; d, abdomen; e, caudal spine or telson.

legs are armed on the basal joint with sharp spines pointing inward for retaining the food or prey. The males differ from the females chiefly in respect to the shape of the second pair of legs, which end in a swollen thumb (next to the last joint) and a slender finger (last joint). The abdomen consists of nine segments, which are distinct in the larva, but which on hatching become fused together. It bears six pairs of broad, leaflike feet, those of each pair fused together along the median line, all but the first pair bearing on each side a set of about 100 leaflike, flat, thin, oval gills. The abdominal limbs of the first pair are called the operculum, since they form a structure which overlaps the other abdominal legs, and on the underside bears two



BOOK GILLS OF LIMULUS.

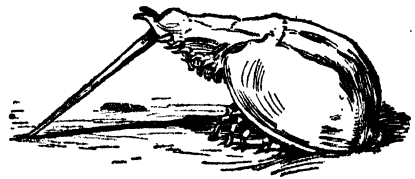
A pair of abdominal legs, seen from beneath, showing the book gills (g) of *Limulus*.

papillæ out of which the eggs pass or, in the male, the seminal fluid.

The internal anatomy is remarkable for the shape of the nervous system, the brain being in front of the œsophagus, which passes through a nerve ring, which distributes nerves to the head appendages. The arteries are very numerous, dividing into numerous microscopic branches, while the nerve ring and principal nerves are coated by an arterial membrane, so that the blood bathes the whole nervous system except the brain.

Unlike the crustacea, the female king crab buries her eggs in the sand between tide marks and then leaves them at the mercy of the waves until the young hatch. They are laid in the Northern States, according to the locality, from the end of May till the end of June—sometimes in July. The young hatch from a month to six weeks after oviposition. The female lays at spring tide at high water, and the eggs are fertilized by the male after they are extruded, he being slightly attached by his claws to the abdomen of his mate. Before hatching the shell bursts open, while the serous membrane within distends, acting as a thin, transparent, vicarious eggshell. The young or larva just before hatching passes through a trilobite stage, the segments being distinctly marked and the body divided into three longitudinal lobes. The caudal spine is rudimentary, becoming longer after each molt. The first molt occurs between three and four weeks after hatching, the shell or skin splitting open around the front.

The king crab burrows in the sand and mud of quiet bays and shallow estuaries and is not to



A KING CRAB.

In the attitude of beginning to dig, or of turning over.

be found on the outer rocky shores of New England. It lives on shellfish and worms, seizing them in a haphazard way as it burrows through the soft sand or mud, for which the body is admirably adapted. When it burrows, the head is bent down at right angles to the hind body, and, if disturbed, the caudal spine is held vertically, as a means of defense. It is extremely large and abundant in Delaware Bay and on the coast of New Jersey, where, after being dried, it is used as a fertilizer; it is also fed to swine and poultry. It also serves as a bait for eels and other fish. In the Moluccas the animal may be seen for sale in the market, being eaten by the lower classes of people. In the southern United States it is called casserole fish, from its resemblance to a saucepan or casserole.

The distribution of the king crab (*Limulus polyphemus*) on the eastern coast of North America is very wide; it ranges from a point between the mouths of the Kennebec and Penobscot rivers of Maine to Mexico, the Spanish Main, and the West Indies, seeming to attain its greatest size at Cape Hatteras and on the Delaware and New Jersey shores. The five existing species of *Limulus* (one American and

four Asiatic) have been recently divided by Pocock and also by Packard into three genera. One species of *Tachypleus* (*Tachypleus tridentatus*) abounds in southern Japan and the Chinese seas; another (*Tachypleus moluccanus*) inhabits the Molucca Islands, Formosa, the Philippines, and southern China; and *Tachypleus gigas*, Malaysia, Gulf of Siam, Singapore, and Torres Strait. *Carcinoscorpius rotundicauda* (Latr.) occurs in the Molucca and Philippine islands, Siam, and Malaysia. This last-named genus is the most primitive form, all the head appendages ending in forceps much like those of the female; while the most specialized form is *Tachypleus*, in which the second and third feet end in forceps, *Limulus polyphemus* is intermediate between the two. None has survived in Europe and other parts of the world except as stated above.

The systematic position of the king crab is unsettled, but it is allied to the trilobites on the one hand and to the arachnids (scorpions) on the other. It represents, according to Packard, a class (Merostomata of Dana) which is intermediate between the trilobites and the Arachnida, with no near affinities to the Crustacea. *Limulus* is an ancient form, of great vitality, withstanding exposure for a day or two to the dry air or sun, and is an example of a persistent type.

Allied to the order Xiphosura, of which *Limulus* is the type, is the order Eurypterida, a group of fossil form, ranging from the Cambrian to the end of the Carboniferous. It is represented by *Eurypterus*, *Pterygotus*, *Slimonia*, etc. (See MEROSTOMATA.) The family to which *Limulus* belongs began to flourish in the Devonian, and the *Limulus* of the Jurassic and present times was represented in the Carboniferous period by small king crabs (*Prestwichia*, *Belmurus*) which were scarcely over 2 inches in length.

Bibliography. Van der Hoeven, *Recherches sur l'histoire naturelle et l'anatomie des limules* (Leyden, 1838); A. S. Packard, "Embryology of *Limulus Polyphemus*," in *American Naturalist*, vol. iv (Salem, 1870); id., "Development of *Limulus Polyphemus*," in *Memoirs of the Boston Society of Natural History*, vol. ii (Boston, 1871); A. Milne-Edwards, "Recherches sur l'anatomie des limules," in *Annales de Science Naturelle*, vol. xvii (Paris, 1872); A. S. Packard, "Anatomy, Histology, and Embryology of *Limulus Polyphemus*" (Boston, 1880); Kingsley, "Notes on the Embryology of *Limulus*," in *Quarterly Journal of Microscopical Science*, vol. xxv (London, 1885); A. S. Packard, "Embryology of *Limulus*," in *Journal of Morphology*, vols. vii, viii (Boston, 1892-93); id., "Further Studies on the Brain of *Limulus Polyphemus*, with Notes on its Embryology," in *Memoirs of the National Academy of Sciences*, vol. vi (Washington, 1893); Pocock, "Taxonomy of Recent Species of *Limulus*," in *Annals and Magazine of Natural History*, vol. ix (7th series, London, 1902); William Patten, *Evolution of the Vertebrates and their Kin* (Philadelphia, 1912), containing a bibliography; for reference to the earliest-known figure of a king crab (c.1585), see W. T. Calman, "An Early Figure of the King-Crab," in *Science*, vol. xxvii (New York, 1908).

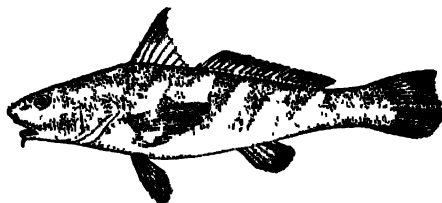
KING CROW. A drongo (q.v.); specifically, the black drongo (*Dicrurus ater*) of all India and eastward. It is black, with a steely-blue

gloss, and is one of the most familiar and conspicuous birds of India, where it is often seen searching for insects on the backs of cattle. It nests in trees. Consult the books of Oates, Jerdon, Blanford, and other East Indian zoölogists.

KING DUCK. The spectacled eider (q.v.).

KING EAGLE. The European imperial eagle (*Haliaeetus heliaca*). See EAGLE.

KINGFISH. Any of several fishes conspicuous for strength or some other quality. 1. The cero, or king cero. See CERO. 2. In California, the little roncador (*Genyonemus lineatus*). 3. The moonfish (*Lampris luna*). See OPAH, and colored Plate of GAME FISHES, under TROUT. 4. A fish of the genus *Menticirrhus*, of the family Scenariidae (croakers), specifically the hake, sea mink, or Northern whiting (*Menticirrhus saxatilis*), one of the most highly esteemed



KINGFISH (*Menticirrhus americanus*).

food fishes in the Northern markets. It is especially numerous and well known in the neighborhood of New York, where it appears early in the spring, along with the squeteague, and is likely to keep in company with it, for both seem fond of running up rivers to a point where the water is decidedly freshened between tides. Thus, they ascend the Hudson as far at least as Ossining. They are apt to run in schools, and they seem to prefer a hard sandy bottom, the edge of channels, and the neighborhood of sand bars. They gather about oyster beds and may be seen fighting for the worms and crustaceans dislodged in taking up the oysters. The kingfish takes a bait of pieces of clam or soft fish readily and affords excellent sport. The numbers seen and taken vary greatly, however, from year to year. A closely related species, the whiting (*Menticirrhus americanus*), is the one more usually called kingfish in the Carolinas and southward. See WHITING.

KINGFISHER. A city and the county seat of Kingfisher Co., Okla., 34 miles west of Guthrie, on the Chicago, Rock Island, and Pacific Railroad (Map: Oklahoma, D 3). It has considerable trade as a distributing and export centre for a productive farming and stock-raising district. The city contains the Kingfisher College and a Federal building. It has adopted the commission form of government. Pop., 1900, 2301; 1910, 2538.

KINGFISHER. A widely used name for the nonpasserine birds of the family Alcedinidae, characterized by the curious syndactyl feet, the outer and middle toes being coherent for half their length. In addition to this peculiarity the kingfishers have large, straight bills, with deep gape; the tongue is very small or rudimentary; the nostrils are basal; the tarsi are very short, and the tibiae are naked below. The family is very well defined and is related to the hornbills (Bucerotidae). In their manners and breeding habits there is a remarkable uniformity among

the kingfishers. All are rather solitary birds. They sit motionless while watching for prey and seize it, when discovered, by a quick, vigorous rush and then return to their post to swallow it at leisure. All breed in holes and lay smooth, white, more or less spherical eggs. The family includes something like 150 species, the geographical distribution of which is unusually peculiar and interesting. Only six, or perhaps eight, species occur in all of America, and these all belong to a single genus (*Ceryle*), which also occurs in the warmer parts of the Old World. The Papuan region is the centre of abundance for the family, having 13 genera, of which eight are endemic. From that centre the family fades away in all directions—Australia having four genera, the Oriental region six, and the Ethiopian region six. The kingfishers fall very naturally into two subfamilies, though the differences between them are more in habits than in structure, the Daceloninae are insectivorous and reptile-eating birds with a depressed bill, and the Alcedininae are the true kingfishers, living very largely on fish and having a compressed bill. A recent classification, based upon somewhat involved characters, adds a third subfamily, Cerylinae.

Daceloninae. The Daceloninae are all Old-World birds, often found far from water, to which they seldom resort, they breed in holes in trees and pick their insect and reptile food from the ground by darting down on it from above. About 80 species are known, the most interesting of which belong to the genera *Dacelo*, *Halcyon*, *Tanysepta*, and *Ceyx*. The first of these includes the famous laughing jackass (q.v.) of Australia, renowned not only for its discordant, laughing cry, but for being a kingfisher which never fishes nor goes near the water. For this latter reason all the Daceloninae are sometimes called (at least in books) king-hunters or dry-land kingfishers, in distinction from true kingfishers. The genus *Halcyon*, or *Aleyone*, is specially characteristic of the Ethiopian region. They are called wood kingfishers, and feed chiefly on insects, but eat lizards, and when hard pressed will resort to streams and catch fish. The inner front toe is short and rudimentary. The kingfishers of the genus *Tanysepta* are peculiar to New Guinea and neighboring islands and are remarkable for having only 10 rectrices instead of 12, the middle pair of which are lengthened and deprived of barbs for a part of their length, so that they are racquet-shaped, like those of some motmots. The genus *Ceyx* is notable for the absence of the second toe, so that the feet are only three-toed; they are small kingfishers of the Indian region.

Alcedininae. In the "true" kingfishers, of the subfamily Alcedininae, we have to deal with birds of moderate or small size and great beauty of plumage. They feed primarily on fish and are therefore found about ponds, lakes, or rivers, or by the borders of the sea. They breed in holes in banks, which they themselves dig, sometimes to a depth of 6 or 8 feet; it is slow work and occupies a pair of birds a week or more. The common European kingfisher (*Alcedo isipda*) and the belted kingfisher (*Ceryle alcyon*) of America are familiar and typical examples of this group. The former is an exquisite little bird, not much larger than a big sparrow, with the upper parts of the head, the scapulars, and the wing coverts dark green, the last two with

light greenish-blue spots and markings; the middle of the back is bright beryl blue and the short tail is azure blue; the throat is white and the rest of the under parts are deep cinnamon. It is a widely distributed bird in Europe and prefers the smaller streams and little ponds in parks and, besides fish, eats insects, crustaceans, mollusks, and worms. It is probable that this bird is the halcyon of the ancients, about which many wonderful fables were current as to its power to quell storms, its floating nest, and the stillness of the winds during its breeding season, which was thought to be in winter.

The American "belted" kingfisher is a much larger bird than the European species. It is as much as 13 inches in length, but its colors are not nearly so brilliant, although they are handsome. The upper parts are bluish gray, more or less spotted, and marked with white, especially on the wings and tail; the under parts are white, with a band across the breast and the sides bluish gray; in young birds the pectoral band and sides are tinged with rufous, while in the female they are distinctly rufous. The belted kingfisher is found breeding throughout North America. Its cry is similar to a watchman's rattle, or to the fisherman's click reel, as John Burroughs happily observes. The only other kingfisher occurring in North America is the Texan green kingfisher (*Ceryle americana septentrionalis*), which is only about 8 inches long and is glossy green above and white beneath, the lower parts spotted with green. It is found in the valleys of the lower Rio Grande and Colorado, where it is said to be common.

Consult: R. B. Sharpe, *Monograph of the Kingfisher* (London, 1871), Newton, *Dictionary of Birds* (New York, 1893-96), W. DeW. Miller, "Revision of the Classification of the Kingfishers," in American Museum of Natural History, *Bulletin*, vol. xxi (ib., 1912), and standard authorities on European and American ornithology. See DACELO, Plate of KINGFISHERS, MOTMOTS, ETC.

KING GEORGE'S WAR. The name commonly given to that part of the struggle known in European history as the War of the Austrian Succession which was fought in America. In Europe hostilities began with the invasion in 1740 of the Austrian Province of Silesia by Frederick II of Prussia. France, Bavaria, Spain, and Saxony soon joined in a league against Austria, while hostility to France and the anxiety of George II for the safety of his Electorate of Hanover early drew England into the struggle on the side of Austria. (See SUCCESSION WARS.) In America the war was begun by the capture in May, 1744, of Canso in Nova Scotia, by a French expedition from Louisbourg. Fearing that the French would follow up this success by an attempt to conquer all of Nova Scotia, Governor Shirley of Massachusetts advised that an attack be made against Louisbourg. The Massachusetts General Court agreed to the plan and appealed to the other Colonies for assistance. In response Pennsylvania sent provisions, and New York some artillery, but the men were furnished by the New England Colonies alone. William Pepperell, a merchant of Maine, was placed in command; and on the last day of April, 1745, the expedition, consisting of about 100 Colonial vessels, 4000 Colonial troops, and a small English squadron under Commodore Warren, appeared before Louisbourg. The place was so strongly fortified that it had

KINGFISHERS, MOTMOTS, ETC.



1. LAUGHING-JACKASS KINGFISHER (*Dacelo gigas*).
2. AMERICAN BELTED KINGFISHER (*Ceryle alcyon*).
3. KIRUMBO (*Leptosoma discolor*); male.

4. MOTMOT (*Momotus lessonae*).
5. BEE-EATER (*Merops apiaster*).
6. LONG-TAILED MOUSEBIRD (*Colius macrurus*).

been regarded by the French as impregnable, and the Colonial troops were so poorly equipped and had so little knowledge of the art of war that an attack upon it seemed almost hopeless, yet after a siege of seven weeks the fortress surrendered. In the three following years there were some conflicts at sea, and there was considerable border fighting, but no very important operations took place, and a much discussed plan for reducing the whole of Canada was not carried out. The struggle was brought to a pause in 1748 by the Treaty of Aix-la-Chapelle, which provided, so far as England and France were concerned, for a return to the status existing before the war was begun. Louisburg was given back to France in return for Madras, much to the dissatisfaction of New England, and the boundaries between the French and English colonial possessions were left unsettled. Consult Francis Parkman, *A Half-Century of Conflict* (2 vols., Boston, 1903), and R. G. Thwaites, *France in America* (New York, 1905).

KING GEORGE V LAND. A part of the north coast of the continent of Antarctica, extending from long 144° E to 153° E, situated to the east of Adelie Land. It is an ice-capped region, discovered and explored between 1911 and 1913 by Sir Douglas Mawson (q.v.)

KING HAAKON VII LAND. The northeastern coast of Victoria Land, facing Melville Sound (q.v.), discovered and explored by Hansen (1903-04)

KING HUNTER. The great Australian kingfisher. See DACELO

KING LAKE, ALEXANDER WILLIAM (1809-91) An English historian. He was the eldest son of William Kinglake lawyer and banker, and was born at Launceston Somersetshire, Aug. 5, 1809. He studied at Eton and Trinity College, Cambridge, where he was a friend and contemporary of Thackeray and Tennyson, and graduated M.A. in 1836. He entered Lincoln's Inn in 1832, was called to the bar in 1837, and soon acquired a large practice. About 1835 he made a tour in the Orient of some length, the result of which was a book entitled *Eastern*, descriptive of his adventures and impressions. It was not published until 1844, but at once attained an astonishing popularity, passing through many editions in England and America and being extensively translated on the Continent. He joined Saint-Arnaud's flying column in Algiers in 1845 and in 1854 followed the British expedition to the Crimea, minutely studying the campaign. In 1863 vols. i and ii of his magnum opus, *The Invasion of the Crimea*, appeared and fully sustained his literary reputation. Volumes iii and iv were published in 1868, vols. v and vi in 1875-80. The last and eighth volume appeared in 1887. His antipathy to Napoleon III and the actors in the coup d'état was marked. From 1857 to 1868 he sat in Parliament as member for Bridgewater and in 1860 was a determined opponent of the annexation of Savoy and Nice. He died in London, Jan. 2, 1891. Consult Tuckwell, A. W. *Kinglake. A Biographical and Literary Study* (London, 1902)

KING LEAR. A famous tragedy by Shakespeare, written in 1604 or 1605, and produced before King James at Whitehall on Dec. 26, 1606. The story on which the play is founded is told by Geoffrey of Monmouth, Layamon, Robert of Gloucester, Holinshed, and others. A dramatization was made in 1593 or 1594, under

the title of the *Chronicle Historie of King Lear*, and was reprinted in 1605, probably because of the success of Shakespeare's play. Percy's *Reliques* preserves the ballad of *King Lear and his Three Daughters*. Lear, King of Britain, desiring to be freed from the cares of ruling, divides his kingdom between his daughters Goneril and Regan, who profess great love for him, and disowns his youngest daughter, Cordelia, who loves him most, but does not satisfy him in the expression of her affection. His elder daughters, having secured his possessions, appear in their true character and by their perfidy and heartlessness drive the aged King to madness. Cordelia, married to the King of France, comes to his rescue, but fails and is put to death, and the broken-hearted King dies by her body.

KINGLET. A very diminutive bird of the genus *Regulus*, formerly classed with the Old World warblers (Sylviidae), but now placed in a family by themselves, Regulidae. It is sometimes called a golden-crowned, or ruby-crowned, or fire-crested warbler or wren. The color above is light olive green, below, yellowish gray, while the crest is orange yellow, ruby red, or fire orange, bordered with black. The female has a paler crest or none. They have a soft and pleasing song, frequent evergreens, and build beautiful cuplike nests, which hang on the twigs of trees. The eggs are numerous (5 to 10), whitish, spotted and marked with pale brown. Ten species are known, inhabitants of northern Europe, Asia, and America. Two species are common in the United States, the golden-crested kinglet (*Regulus satrapa*), which is the smaller, only 4 inches long, and the ruby-crowned kinglet (*Regulus calendula*), which is 4½ inches in length. Both are either migrant or winter visitors in most parts of the United States, but the goldcrest breeds in various mountainous regions, as far south as the Carolinas. The rubycrown is a famous songster and one of the most notable of our spring migrants. See Plate of WRENS, WARBLERS, ETC.

KING LOG. In a fable of Æsop, a log sent by Jupiter in response to the petition of the frogs for a king. Their contempt for their new ruler, when they discovered his character, led them to ask for another king, whereupon Jupiter sent a stork, who began to devour his subjects.

KING LORY. A bird dealer's name for an Australian parrot of the genus *Aprosmictus*—not a true lory (q.v.)

KING MAKER, THE. A title frequently given to the powerful Richard Neville, Earl of Warwick. See WARWICK.

KINGMAN. A city and the county seat of Kingman Co., Kans., 45 miles west of Wichita, on the Atchison, Topeka, and Santa Fe and the Missouri Pacific railroads (Map: Kansas, D 7). It is in an agricultural and stock-raising region, has abundant water power, and manufactures flour and creamery products. The city contains a Carnegie library and owns its water works and electric-light plant. Kingman adopted the commission form of government in 1912. It was formerly the site of one of the largest salt mines in the country, but the shaft was destroyed by fire in 1910. Pop., 1900, 1785; 1910, 2570.

KING MONKEY. A semnopithecine African monkey, or guereza, of the genus *Colobus*. This genus has excited much interest because of its approach in some characters to the American

division of monkeys. These characters are the practical absence of the thumb and the wideness of the nostrils. They are slender monkeys, with well-marked callosities, and have a large, complex, sacculated stomach and small cheek pouches. Elliot recognizes about 30 species, all of equatorial Africa, and all have beautiful skins, much in demand, whence some species are nearly exterminated. They live in small troops and keep to the tallest jungle trees. Their diet is chiefly leaves. In captivity, owing probably to lack of accustomed exercise, they do not live long.

KINGO, kjiŋ'gô, THOMAS HANSEN (1634-1703). A Danish hymnologist, of Scottish descent, born at Slangstrup. His secular poetry was popular in his day, largely because written in Danish. In 1673-81 he published *Aandelige Sjungekcor*, a collection of hymns superior to anything that had preceded. An authorized *Kirkesalmebog* (hymn book) for Denmark (1699) contained many selections of his writing; the new Danish *Kirkesalmebog*, now in use, has 100 of his hymns, and Landstad's (q.v.) new *Kirkesalmebog* for Norway and for Norwegians in America, 117. Kingo's collected hymns appeared in 1827 and his *Aandelige Sjungekcor* in 1856.

KING-OF-ARMS. See KING-AT-ARMS.

KING OF BEGGARS. A title given to Bamfylde Moore Carew, a noted English vagabond of the early eighteenth century.

KING OF DUNCES. A nickname applied in Pope's *Dunciad* to Colley Cibber (q.v.).

KING OF OCKHAM, PETER, first BARON (1669-1734). An English lawyer and politician, cousin of John Locke. He was born in Exeter, was educated at a Nonconformist academy in Exeter and at the University of Leyden, began the study of law at the Middle Temple in 1694, and was called to the bar in 1698. He entered Parliament in 1701 as member for Beeralston in Devonshire and became prominently identified with the Whig party. In 1708 he was knighted, in 1710 was a leader in the impeachment proceeding against Sacheverell, in 1714 was made Chief Justice of Common Pleas, and in 1715 became a member of the Privy Council. He was appointed Speaker of the House of Lords early in 1725 and presided at the trial of his predecessor, the Earl of Macclesfield; was made Baron in May of the same year and in June became Lord Chancellor. As judge of Common Pleas, he had gained a reputation for impartiality and wide legal learning; but the transfer from a civil court to one of equity showed him deficient in the details of chancery law, and his inattention to the cases brought before him and delay in handing down decisions were in complete harmony with the traditions of English chancery proceedings. He resigned in 1733, owing to a stroke of paralysis. He delivered several decisions which established principles in equity, was a fellow of the Royal Society, and published: *An Enquiry into the Constitution, Discipline, Unity, and Worship of the Primitive Church* (1691; 2d ed., enlarged, 1712); and *A History of the Apostles' Creed* (1702). Consult Welsby, *Lives of Eminent English Judges* (London, 1846), and Campbell, *Lives of the Lord Chancellors* (ib., 1858).

KING OF OCKHAM, PETER, seventh BARON (1776-1833). An English economist, who succeeded to the family title in 1793. He was educated at Eton and Cambridge, entered the

House of Lords in 1797, voted with the Whig party, and spared no pains to get at the root of all matters relating to the currency. His *Thoughts on the Effects of the Bank Restrictions* (1804) was a plea for specie payments which he tried to enforce upon his own estates, and in behalf of Catholic emancipation he wrote *On the Conduct of the British Government towards the Catholics of Ireland* (1807), while his opposition to the Corn Laws is witnessed by *A Short History of the Job of Jobs* (1846), published posthumously. Lord King also produced a *Life of John Locke, with Extracts from his Correspondence, Journals, and Commonplace Books* (2 vols., 1830, Bohn's ed., 1858).

KING OF THE HERRINGS. The moonfish (*Lampris luna*). See KINGFISH; MOONFISH. The name is also applied to various other fishes, such as the chimæra and the oarfish.

KING OF THE MACKERELS. A pelagic fish (*Ranzania truncata*), of very brilliant colors, closely allied to and shaped like a sunfish (*Mola*), which is occasionally taken off the eastern coast of the United States. Jordan remarks that a similar species is regarded about the Sandwich Islands with veneration as the "king of the tunnies and mackerels."

KING OF THE MULLET. A small fish of the Mediterranean (*Apogon imberbis*), renowned for its beauty. It is bright scarlet with minute black specks, fins and tail red tipped with black. The genus is a large one, with species scattered throughout the tropical world, all are of brilliant cardinal, scarlet, or carmine hues.

KING PENGUIN. The largest of the penguins (*Aptenodytes pennanti*, or *patagonica*), a native of the Falkland and other Antarctic islands. See PLATE OF AUKS.

KING PHILIP'S WAR. See PHILIP, KING.

KING-POST. In architecture, the vertical post or strut in the simplest form of triangular truss; the upper end keyed into the meeting ends of two rafters and the lower mortised, pinned, or strapped to the middle point of the tiebeam. Under normal conditions it is not really a post or strut, but a vertical tie or suspension member. See TRUSS, and Illustration under ROOF.

KING RAIL. One of the large rails (*Rallus elegans*) of the eastern United States, often called "fresh-water marsh hen," in distinction from the larger, grayer clapper rail, or "salt-water marsh hen." It is 18 inches long, brownish black with bright chestnut below and on the wing coverts. It has the habits of the family. See RAIL.

KINGS, BOOKS OF (Heb. *mēlakim*, Gk. βασιλειῶν, *bibloi basileiōn*, Lat. *libri regnorum*). The name given to two of the canonical books of the Old Testament. Originally they were but one, but are separated in our manuscripts of the Greek version and the translations dependent on it, in which they are designated "the third and fourth of the kingdoms"—the books of Samuel forming the first and second. This division into two books was copied by the Vulgate and passed thence into the general usage of Christendom. The exact titles of these books in the English Authorized Version are *The First Book of the Kings*, *Commonly Called the Third Book of the Kings*, and the *Second Book of the Kings*, *Commonly Called the Fourth Book of the Kings*. They embrace (1) the reign of Solomon (1 Kings i-xi), (2) the history of the divided kingdoms of Judah and Israel to

the downfall of the latter (1 Kings xii-2 Kings xvii); (3) the history of the Kingdom of Judah after the destruction of the northern kingdom until the Babylonian captivity (2 Kings xviii-xxv).

The division of Kings into two books is not warranted by the contents any more than the separation of Kings from the two preceding books of Samuel. The four books constitute a continuous historical series, and the Greek version, in designating them all by a single name, obeys a correct instinct as to their nature. What we have in Samuel and Kings is a compilation, from various sources, made by a series of editors whose aim it was to carry the history of the Hebrews on from the point where it was left by the compiler of Judges. The first redaction of the sources included in Samuel and Kings appears indeed to have been made before the destruction of the Kingdom of Judah, though after the reformation of Josiah (620 B.C.); but the method of historical composition among the Hebrews left it open for later editors to make all manner of additions and insertions, which, without necessarily effacing the work of the earlier writers, would carry the history still further down. The considerable variations between the Greek and Hebrew texts of Samuel and Kings furnish the proof for the assumption of various redactions of this compilation.

Among the sources embodied in the books of Samuel and Kings the most notable are: In Samuel, (1) a history of Saul, compiled by a Benjamite or Judæan, probably in the ninth century B.C., embodied in 1 Sam ix-xiv; (2) a history of David, containing (a) a later compilation (ninth century) embodied in 1 Sam xvi-xxvi and 2 Sam. i-v, xxi-xxii, and (b) an earlier one, probably made by a contemporary (2 Sam. ix-xx); (3) a considerably later compilation of the history of Samuel and Saul, scattered through 1 Sam. i-xxvi. In Kings, (1) continuation of the history of David, found in 1 and 2 Samuel; (2) a biography of Solomon embodied in 1 Kings iii-xi, (3) stories of prophets, compiled probably in the eighth century B.C., embodied in 1 Kings xvii-xxi and 2 Kings ii-xiii; (4) extracts from compilations known as "Book of the Kings of Israel" and "Book of the Kings of Judah," though it is quite possible that the compiler of Kings has in mind a *single* work covering the annals of both the kings of Israel and Judah.

These as the main sources have been pieced together, and the history of the period has been included in the compilation brought under a single aspect through the skill of editors who viewed the facts of the past as illustrations of their religious theory, which implied that Judaism arose in its perfected form in the days of Moses, and that all the disasters and misfortunes happening to Israel are punishments sent by Yahwe for disobedience to His Law as given to the people through Moses. It is therefore necessary before utilizing the valuable material embodied in Samuel and Kings to make due allowance for this theory and to distinguish carefully between facts and the interpretation put upon them. In the second place, as in Joshua and Judges, the careers of the favorite heroes—notably David (q.v.) and Solomon (q.v.)—have been embellished with legends and the characters themselves idealized by projecting into the past views and religious conceptions that belong to much later ages. The same ele-

ment of legend, and to a certain extent myth, enters into the stories of the prophets Elijah (q.v.) and Elisha (q.v.), while the kings of Israel and Judah are judged entirely from the point of view of the above-outlined pragmatic method adopted already by the first group of editors. On the other hand, it should be emphasized that the extracts from the annals of Israel and Judah give us much valuable authentic history, as is shown by the references in Egyptian, Assyrian, and Syrian inscriptions, such as the inscription of Sheshonk I describing the invasion in the time of Rehoboam (c.948 B.C.), the Zakir inscription alluding to Bar Hadad II of Damascus, the Mesha inscription referring to Omri and Ahab, the inscriptions of Tiglath-pileser IV, Shalmaneser and Esarhaddon referring to the house of Omri, to Ahab, Jehu, Pekah, Pekahiah, and Hosea of Israel, and to Ahaz, Hezekiah, and Manassch of Judah. The chronology of Kings has been in part confirmed and in part corrected by the more accurate Assyrian chronology.

Bibliography. Consult histories of Stade, Guthe, Kittel, Wellhausen, Renan, Kent, and Piepenbring, and commentaries by Kittel and Benzinger. Among older commentaries, those of Thénius (2d ed., Leipzig, 1873) and Keil (2d ed., ib., 1876) are still of value.

KING SALMON. A name for the quinnat (q.v.).

KING'S BEADSMEN. See BLUEGOWNS.

KING'S (or QUEEN'S) BENCH. An ancient English court of common law, which succeeded the *Curia Regis*, or King's Court, in its criminal jurisdiction and also in a few civil matters. This jurisdiction, however, it gradually extended, until it became the most important common-law court of the kingdom, having jurisdiction over all criminal cases on the "crown side" and all civil causes between subject and subject on the "plea side." It also had important supervisory powers over certain inferior tribunals, *magistratus* and all civil corporations. It had authority to pass on the extent of the jurisdiction of inferior courts and to remove causes to itself where they were improperly commenced in such courts. It consisted of a Lord Chief Justice and four puisne or associate justices. The Chief Justice bore the distinguished title of Lord Chief Justice of England. By the judicature acts of 1873 it was merged in the High Court of Justice; but the name was preserved as the King's Bench Division of the High Court, which retains its former important jurisdiction as well as that formerly exercised by the two other superior courts of common law, viz, the Court of Common Pleas and the Court of Exchequer (q.v.). See also CURIA REGIS; JUDICATURE ACTS; COURT.

KINGSBOROUGH, EDWARD KING, VISCOUNT. See KING, EDWARD.

KING'S COLLEGE. The name of the college in New York City which later was called Columbia College. See COLUMBIA UNIVERSITY.

KING'S COLLEGE, CAMBRIDGE. A college of Cambridge University, originally known as the College of St. Nicholas. It was founded by Henry VI in 1441, along with Eton College, Windsor, as its preparatory school. The college was the first in Cambridge to be designed on a splendid architectural scale, of which the chapel, begun by Henry VI, continued by Henry VII, and completed by Henry VIII, is

now the most striking feature and the only part of the original plan fully carried out. The foundation consisted of a provost, 70 fellows, and scholars, chaplains, clerks, choristers, and servitors to the extraordinary number of 140. The college had, from the first, unusual privileges, like New College, Oxford, such as exemption from the jurisdiction of the Archbishop of Canterbury, the Bishop of Ely, and even of the university, in matters scholastic. Till 1857 the members of King's College could take a degree without passing the university examinations, which privilege tended to lower the scholarship of its members. The revenues of the college are said to have been reduced by Edward IV, but were increased by succeeding benefactions. The college had, in 1913-14, a provost, 47 fellows, and 48 scholars, with lecturers, tutors, and college officers, and some 166 undergraduates. It presents to some 40 livings. Except the chapel, the buildings are not of pronounced distinction. The chapel, however, is the finest college chapel in existence and probably the finest example of its style of architecture in the world in size, form, and decoration. It contains some of the best glass and wood carving in England. Among the worthies of King's have been Sir Robert Walpole, the first Sir William Temple, Lord Stratford de Redcliffe, Archbishop Sumner, Bishop Pearson, and Richard Croke, the Greek scholar. See **ETON COLLEGE, CAMBRIDGE, UNIVERSITY OF**. Consult T. J. P. Carter, *King's College Chapel: Its History and Present Conditions* (London, 1867), and A. A. Leigh, *King's College, Cambridge* (ib., 1899).

KING'S COLLEGE, LONDON, ENGLAND. It was founded in 1829 (opened 1831) as an outgrowth of a division in opinion between the founders of the University of London, which had been established in 1825-27. King's College, like University College, became a teaching body, while the University of London became an examining body. Since 1910 the college has been a part of the University of London. The college is in connection with the Church of England, and its courses embrace theology, literature, science, pure and applied, and medicine. There is a school connected with the college, which was removed recently to Wimbledon. It is now located in the east wing of Somerset House. In the museum are the Babbage calculating machine and the George III collection of mechanical models and philosophical instruments. The college is one of the few in England with a school of modern Oriental languages. Perhaps its best-known alumnus is Dean Farrar. Other students were Prof. Thorold Rogers, Sir James Fitzjames Stephen, Professor Cayley, and the brothers Rossetti, whose father, Gabriele Rossetti, was professor of Italian there. In 1912-13 the number of students was 2745—King's College for Women, which was founded in 1877 and combined with King's College in 1885, is now located in Kensington and in 1910 also became a part of the University of London. It is the only institution in England offering a degree course in home science. There are about 100 students.

KING'S (or QUEEN'S) COUNSEL. In Great Britain a title of honor conferred by royal patent on barristers of distinction. The patent, issued in the King's (or Queen's) name, on the recommendation of the Lord Chancellor, appoints the patentee "one of our counsel

learned in the law." It confers no office, but gives certain rights of precedence over barristers not so honored and is a highly valued distinction. King's counsel are privileged to sit within the bar and wear a distinctive costume, which consists of a silk robe and, in the House of Lords, a full-bottomed wig. The dignity is said to have been first conferred on Lord Bacon by Queen Elizabeth.

It represents in modern times the distinction formerly enjoyed by the sergeants at law (q.v.) or Order of the Coif, now obsolete. It exists in Scotland, Ireland, and the British colonies, as well as in England. No corresponding dignity exists in the legal profession in the United States. See **BARRISTER**.

KING'S COUNTY. An inland county of Ireland, bounded east by Kildare and west by the Shannon, which separates it from Roscommon and Galway (Map: Ireland, D 5). Area, 772 square miles. Stock raising is the chief industry, the soil being in general sterile. The most important towns are Lullamore, the capital, Birr, Edenderry, and Clara. Pop., 1841, 147,550, 1901, 60,187, 1911, 56,832.

KING'S COURT. See **CURIA REGIS**.

KING'S DAUGHTERS AND SONS, INTERNATIONAL ORDER OF. An organization formed in New York City, early in 1886, as a distinctly spiritual force. At first women only were admitted to membership, but the society was soon enlarged to take in men and boys. It is strictly undenominational, organized in circles, city and county unions, chapters, and State branches, and has a central council which is incorporated, with headquarters in New York City. The social and religious services are of the most varied description, each circle being given free choice in choosing its own special work. The idea is to work "first for the heart, next the home, then the Church, and after that the great outside." The badge of the society is a Maltese cross of silver, bearing the initials I. H. N. (In His Name). A monthly magazine, the *Silver Cross*, is published in New York. There are branches in 32 States and 8 Canadian provinces and circles in China, Japan, India, and Syria. Consult the *King's Daughters' Yearbook* (New York).

KING'S (or QUEEN'S) EVIDENCE. In England a person who, having been an accomplice in some crime, has confessed and offered to give evidence against his fellow criminals. The usual practice of the crown in such cases is to pardon the person so testifying, though he is not as a matter of legal right entitled to a pardon; and an application is generally made to the judge to admit the party as a witness on the trial of his accomplices. A similar practice exists in Scotland, the public prosecutor having the power and discretion to admit the confessing party. For the corresponding practice in the United States, see **STATES EVIDENCE**.

KING'S EVIL. See **SCROFULA**.

KINGSFORD, kingz'fôrd, CHARLES LETHBRIDGE (1862-). An English historical writer, born at Ludlow, Shropshire. He was educated at St. John's College, Oxford. In 1889 he joined the editorial staff of the *Dictionary of National Biography*; in the following year became examiner of the Education Department, of which he was assistant secretary in 1905-12; and was made a member of the council of the Royal Historical Society. His publications include: *Song of Lewes* (1890); *The Crusades*

(1894), with T. A. Archer; *Henry V* (1902); *Chronicles of London* (1905); *Stow's Survey of London, with Introduction and Notes* (1908); *Sir Otho de Grandison* (1909); *The First English Life of Henry V* (1911); *English Historical Literature in the Fifteenth Century* (1913).

KINGSFORD, WILLIAM (1819-98). A Canadian historian, born in the Parish of St. Lawrence Jewry, London, England. He was educated at Camberwell and studied architecture, but his tastes were otherwise, and he enlisted as a private in the dragoon guards when 16 years old. In 1837 he went with his regiment to Canada and rose to be sergeant, but left the army (1841) to go into the city surveyor's office in Montreal. He was employed in the survey for the Lachine Canal (1846-48) and the following year came to the United States to aid in the building of the Hudson River Railroad. Thence he went to Panama and was an engineer on the railway building there. Afterward he was surveyor for the Grand Trunk Railroad and then a district superintendent of the line. He was again in the Canadian public service in connection with the Rideau Canal and was Dominion engineer in charge of the harbors of the Great Lakes and the St. Lawrence from 1872 to 1879. He published *History, Structure, and Statistics of Plank Roads in the United States and Canada* (1852), *Impressions of the West and South* (1858), *The Canadian Canals* (1865), *A Canadian Political Corn* (1874), *Canadian Archaeology* (1886), and *The Early Bibliography of Ontario* (1892); but by far his most important work is his *History of Canada* (10 vols., 1887-97), the result of 17 years' faithful study of the Canadian archives. Consult T. G. Marquis, "English-Canadian Literature," in *Canada and its Provinces*, vol. vi (Toronto, 1914). See also CANADIAN LITERATURE.

KINGSLEY, kingz/II, CALVIN (1812-70). An American Methodist Episcopal bishop, born in Annsville, Oneida Co., N. Y. He graduated from Allegheny College in 1841, entered the ministry, and from 1846 to 1856 was a professor in his alma mater. From 1856 to 1864 he was editor of the *Western Christian Advocate* of Cincinnati. The General Conference of 1864 elected him Bishop. In 1867 he visited the missions in Europe, and in 1869 he started on a tour of all the mission stations of the Orient, beginning with Japan. On his return journey he died at Beirut, Syria. Noted as a debater, he twice discussed with Luther Lee in public the attitude of the Methodist Episcopal church to slavery. He was the author of *The Resurrection of the Dead: a Vindication of the Literal Resurrection of the Human Body* (1847; later eds.) and *Round the World: A Series of Letters* (2 vols., 1871).

KINGSLEY, CHARLES (1819-75). An English author and clergyman, born at Holne vicarage, Devonshire, June 12, 1819. He entered Magdalen College, Cambridge, in 1838, where he distinguished himself in classics and mathematics. In 1842 he became curate and, two years later, rector of Eversley in Hampshire. In 1848 he published *St. Elizabeth of Hungary*, a drama of mediæval piety, which contains scattered passages of rare poetic power and beauty. The next two or three years of his life were devoted—in company with his friend F. D. Maurice and others—to the physical and moral improvement of the working classes. In 1850-51 he was a contributor, over the signature

Parson Lot, to the *Christian Socialist*. His opinions on the social anarchy of modern times are to be found in his *Alton Locke, Tailor and Poet* (1849), a novel of some power, the hero of which is taken from a London workshop. This was followed by *Yeast, a Problem* (1849), in which Kingsley handles, among other questions, the condition of the English agricultural laborer, and in 1853 by *Hypatia, or New Foes with an Old Face*, a brilliant delineation of Christianity in conflict with the expiring philosophy of Greece in the early part of the fifth century. Two years after he published *Westward Ho!*—probably the greatest of his works. As a novelist, he excels in stirring narrative and in description—witness the vivid word painting of South American scenery in *Westward Ho!* or of the Egyptian desert in *Hypatia*. Other works of his are the famous London sermon called *Message of the Church to Laboring Men and Two Years Ago* (1857), *Water Babies* (1863), *Hereward the Wake* (1866), *The Hermits* (1869), and *At Last*, a delightful account of a voyage to the West Indies (1871). He was appointed professor of modern history at Cambridge in 1860 and, after resigning that post, was made, in 1869, canon of Chester and afterward canon of Westminster. In 1867 he had a passionate controversy with John Henry Newman because Kingsley had said (1860) that "truth for its own sake had never been a virtue with the Roman Catholic clergy." One of the most impressive preachers of his day, the best of his published discourses are to be found in his *Twenty-five Village Sermons* (1849). Kingsley's versatility is striking. With almost equal fervor he studied social questions, religion, and zoology. He was a Christian as ardently as he was an admirer of Darwin and Huxley and their science. Darwin and theology seemed to him compatible. Kingsley's health began to fail about 1863. In 1874 he visited the United States in search of health. In 1875 appeared the *Lectures Delivered in America*. He died at Eversley, Jan. 23, 1875, and was buried there. Consult the Chester edition of the *Works*, edited by his son, Maurice Kingsley (14 vols., London, 1900); *Letters and Memories*, by his wife (ib., 1877; condensed, 1883); *The Life and Works of Charles Kingsley* (19 vols., New York, 1902); and, for an aspect of his work, Mauritz Kaufmann, *Charles Kingsley, Christian Socialist and Social Reformer* (ib., 1892); C. W. Stubbs, *Charles Kingsley and the Christian Social Movement* (New York, 1899); F. S. Goldberg, "Kingsley and the Social Problems of his Day," in *Western Review*, vol. clxvii (London, 1907); C. E. Vulliamy, *Charles Kingsley and Christian Socialism*, "Fabian Society, Biographical Series" (No. 5, ib., 1914).

KINGSLEY, HENRY (1830-76). An English novelist, the brother of Charles Kingsley, born at Barnack, Northamptonshire. From King's College, London, he went to Oxford, but at the age of 23 left without graduating to seek his fortune in the gold fields of Australia. He did not find it directly during his five years' quest, but indirectly through his novel, *Geoffrey Hamlyn* (1859), dealing with colonial life, which he published on his return. While editor of the *Edinburgh Daily Review* he was also its correspondent during the Franco-Prussian War, and was credited with being the first Englishman to get into Sedan after its fall (1870). He wrote some 16 novels and did miscellaneous

literary work in addition thereto. His books include, notably: *Geoffrey Hamlyn*, just mentioned; *Ravenstoe* (1862); *Austin Elliot* (1863); *The Hillyars and Burtons* (1865); *Leighton Court* (1866); *Silcote of Silcotes* (1867); *Mademoiselle Mathilde* (1868); *Stretton* (1869); *Old Margaret* (1871); *The Harveys* (1872); *Reginald Hetherage* (1874); *Number Seventeen* (1875); *The Grange Garden* (1876); *Fire-side Studies* (1876). His *Works* were edited by C. K. Shorter (12 vols., c.1905).

KINGSLEY, JAMES LUCE (1778-1852). An American scholar, born in Scotland, Conn. He graduated at Yale in 1799, two years afterward became a tutor, and in 1805 was appointed first professor of ancient languages at Yale. He remained in this position until 1831, after which he was professor of Latin (emeritus in 1851) until his death. He was master of an elegant style in Latin and in English and was well versed in American history. He delivered the address on the two hundredth anniversary of the settlement of New Haven (1838) and wrote a brief *History of Yale College* (1835) and (in Sparks's *American Biography*) a life of Ezra Stiles, president of Yale College. Consult the memorial addresses by T. D. Woolsey and T. A. Thacher and sketches of his life by D. C. Gilman.—His son, **HENRY C. KINGSLEY** (Yale, 1843), was treasurer of Yale College in 1862-86; and a younger son, **WILLIAM L. KINGSLEY** (Yale, 1843), was long the editor of the *New Englander*, until his death in 1896.

KINGSLEY, JOHN STERLING (1854-). An American zoölogist and teacher, born at Cincinnati, N. Y. He graduated at Williams College in 1875 and received the degree of Sc.D. from Princeton in 1885. Subsequently he was professor of zoölogy at the University of Indiana (1887-89), professor of biology at the University of Nebraska (1889-91) and at Tufts College (1892-1913), and professor of zoölogy at the University of Illinois after 1913. In 1884-96 he was one of the editors of the *American Naturalist* and after 1910 of the *Journal of Morphology*. He edited the *Standard Natural History* (6 vols., 1886), wrote *The Naturalist's Assistant* (1882), *The Embryology of Limulus* (1893), *Elements of Comparative Zoölogy* (1896; 2d ed., 1904), *Text-Book of Vertebrate Zoölogy* (1899), *Guides for Vertebrate Dissection* (1907), and translated and edited Hertwig's *Manual of Zoölogy* (1902; rev., 1912) and *Comparative Anatomy of Vertebrates* (1912).

KINGSLEY, MISS MARY H. (1862-1900). An English traveler and author, the daughter of George Henry Kingsley (1827-92) and niece of Charles Kingsley. Born at Islington, London, she was early interested in science and read the writings of Darwin, Huxley, and Lubbock. In 1893 she went to St. Paul de Loanda, in Portuguese West Africa, to study primitive religion and to gratify her zest for scientific research and for collecting specimens of various kinds. She returned the next year, after encountering many difficulties and traveling through parts of the country known only to the natives. In the latter part of 1894 she returned to Africa for the purpose of exploring the lower Niger region and studying its flora. In the elephant and gorilla countries she had several narrow escapes, traveling frequently up the rivers and through the bush with only native attendants. She traveled through the Niger Coast Protectorate, Kamerun, and Gabun. The

results of her journeys were published in the exceedingly interesting *Travels in West Africa* (1897) and *West African Studies* (1899). Early in 1900 she went to South Africa and was attached to the military hospital at Simons Town, where, after nursing Boer prisoners, she became ill and died.

KING'S LYNN, or LYNN REGIS, lin rě'jis. A seaport in the County of Norfolk, England, 3 miles from the mouth of the Great Ouse, and 41 miles northwest of Norwich (Map: England, G 4). The harbor of Lynn is connected with the sea by a waterway and has large docks covering more than 100 acres. It has fine ecclesiastical buildings, St. Margaret's Church, containing the finest brasses in England, national schools, and charitable institutions. Its grammar school (where Eugene Aram was usher) was founded in 1510 and completely rebuilt in 1906. The town was formerly fortified and defended by a moat, which, with ruins of the walls and the handsome Gothic "South Gates," still exists. The town owns real estate, a water supply, electric works, and a cemetery, and maintains baths, free library, fire brigade, and a technical school. The industrial establishments include shipyards, oil mills, machine shops, iron foundries, breweries, malt houses, etc. Lynn received its first charter from King John in 1204. It was known as Lynn Episcopi, Bishop's Lynn, which at the Reformation was changed to Lynn Regis, or King's Lynn. Frances Burney (Madame d'Arblay) was a native of the town. During the European War of 1914 King's Lynn was attacked by a German aerial fleet. The presumable objective, Sandringham House, a residence of Queen Alexandra, was not damaged. Pop., 1901, 20,300, 1911, 20,201. Consult: Richards, *History of Lynn* (Lynn, 1812); Harrod, *Records of King's Lynn* (ib., 1874).

KING'S MOUNTAIN, BATTLE OF A battle fought on Oct. 7, 1780, during the Revolutionary War, between an English and Loyalist force of about 1100 under Lieutenant Colonel Ferguson and less than 1000 Georgia, North Carolina, and South Carolina backwoodsmen under William Campbell, James Williams, Benjamin Cleveland, Isaac Shelby, and John Sevier. King's Mountain is a ridge more than a mile long, rising nearly 100 feet above the surrounding level, just within the limits of Charlotte, N. C. Here Ferguson, hard pressed by the infuriated militia, intrenched himself and was soon afterward attacked with the greatest gallantry by the Americans. The engagement lasted for about an hour, and the English, whose commander was mortally wounded, were finally forced to surrender, after having lost about 250 killed and wounded and 664 prisoners. The Americans lost 28 killed and 60 wounded. This victory, besides demonstrating the fighting capacity of the backwoodsmen, forced Cornwallis to postpone for a time his invasion of North Carolina. Consult Draper, *King's Mountain and its Heroes* (Cincinnati, 1881), and McCrady, *South Carolina in the Revolution* (New York, 1801).

KING SNAKE. 1. The name in the United States of a variety of snakes believed to make war successfully on the rattlesnake and copperhead. The snake most usually meant by it in the Northern and Middle States is the chain snake (q.v.), but the whole of the genus *Ophibolus* is properly so designated, and perhaps

KINGSTON. The capital and chief seaport of the island of Jamaica, situated on a small, arid plain, on the southeast coast of the island (Map: West Indies, C 3). There are clean streets and a good water supply and a sewage system. It is lighted by electricity and has electric street railways. The town is strongly fortified. The suburbs are remarkable for their natural beauty, and many of the wealthier residents, including the Governor, live outside of the city limits. The harbor admits the largest vessels, and an active import and export trade is carried on. The railways of the island centre here. Near Kingston are the ruins of the old town of Port Royal, which was destroyed by an earthquake in 1693. Pop., 1891, 46,540; 1911, 57,379. On Jan. 15, 1907, an earthquake in Kingston and neighboring towns caused the death of over 600 persons and the destruction of several million dollars' worth of property.

KINGSTON. A city and the county seat of Ulster Co., N. Y., 88 miles north of New York City, beautifully situated on the Hudson River and on the north shore of Rondout Creek. It is a stopping point on all the river steamship lines and is on the West Shore, the Ulster and Delaware, and the New York, Ontario, and Western railroads (Map: New York, F 7).

The city contains Kingston Point Park, the West Shore Railroad bridge (150 feet above tidewater), and fine city-hall, courthouse, library, and other buildings. Other noteworthy features are the Senate House, with a collection of relics (New York State's first capitol), the tuberculosis hospital, a large sanitarium, the Industrial Home, and the Roman Catholic Orphanage.

Kingston, with its excellent transportation facilities, is the centre for a large trade in coal, stone, brick, lime, lumber, grain, and cement, has extensive railroad shops, steamboat plants, automobile works, lace mills, and foundries; and manufactures cigars, cement and stone, shirts, hardware, bricks, etc. The government is administered by a mayor, who controls appointments to most of the important municipal offices, and a unicameral council. The recorder and city judge are chosen by popular election. The water works are owned by the city. Pop., 1900, 24,535; 1910, 25,908; 1914 (U. S. est.), 26,493.

The first settlement here was made in 1652 by the Dutch, who called it Esopus, after the Esopus Indians. Until 1661, when it was organized with a separate jurisdiction as Wiltwyck, it was a dependency of Fort Orange (Albany). In 1667 the English took control and in 1669 changed the name to Kingston. On April 20, 1777, New York's first State constitution was adopted here, and on September 9 Chief Justice Jay opened the first State court. On Oct. 16, 1777, an English force under General Vaughn entered the town and burned down every building except the Centennial House, which still stands. In 1805 Kingston was incorporated as a village, and in 1872 it received a city charter and was enlarged by the addition of two adjoining villages, Rondout and Wilbur. Consult Schoonmaker, *The History of Kingston to 1820* (New York, 1888).

KINGSTON. A borough in Luzerne Co., Pa., on the Susquehanna River, opposite Wilkes-Barre, and on the Lackawanna and the Lehigh Valley railroads (Map: Pennsylvania, K 4). Wyoming Seminary (Methodist Episcopal) is

situated here. The borough is essentially a residential place, but has a large adding-machine factory, car and machine shops, and manufactures of hosiery. The coal mines in the vicinity also afford employment for many of its inhabitants. Pop., 1900, 3846; 1910, 6449. Near Kingston stood Forty Fort, prominent in the Pennamite-Yankee War and in the Revolution. In the vicinity of this fort occurred, in 1778, the famous Wyoming Massacre. (See WYOMING VALLEY.) A monument 60 feet high has been erected on the site of the fort to commemorate the battle and massacre. Kingston was incorporated as a borough in 1858. Consult Pearce, *Annals of Luzerne County, Pennsylvania* (Philadelphia, 1860).

KINGSTON, CHARLES CAMERON (1850-1908). An Australian statesman, born in Adelaide. He was educated in his native city and in 1873 was called to the bar. After 1881 he represented West Adelaide in the South Australian House of Assembly; he was thrice Attorney-General of South Australia and from 1893 to 1899 was Premier. As an advanced Liberal, he favored radical measures in regard to the franchise, land, and labor questions. During his administration woman suffrage was enacted into law, the Labor party was conciliated by factory legislation in behalf of workmen, and progressive income taxation and death duties were imposed. He took part in the discussions preceding the establishment of the Australian commonwealth and in 1897-98 presided over the convention which framed the bill for that purpose. He was Minister of Trade and Customs in the first Federal cabinet (1901-03) and from 1901 to his death represented Adelaide in the commonwealth House of Representatives.

KINGSTON, ELIZABETH (CHUDLEIGH), DUCHESS OF (1720-88). An English adventuress, daughter of Thomas Chudleigh, who died in 1726, leaving his family in poverty. In 1743 her remarkable beauty led to her appointment as maid of honor to the Princess of Wales, mother of George III. She was privately married in 1744 to Captain Hervey, a grandson of the first Earl of Bristol, but did not long live with him and for many years led a dissolute life. In 1769 the court granted her freedom from Hervey, after she had sworn that she was not married, and the same year Evelyn Pierrepont, the second Duke of Kingston, whose mistress she had been for some time, married her, and upon his death, in 1773, she succeeded to his large fortune. An attempt was made by the Duke's relatives to set aside the will on the ground of bigamy, of which offense she was declared guilty by the House of Lords in 1776; but her right to retain the property was conceded on the ground that she received it by bequest. She spent much of her time on the Continent to avoid further litigation, lived for a while after 1777 in St. Petersburg, and died in Paris. She is said to have been the original of Beatrice in Thackeray's *Esmond* and of his Baroness Bernstein in *The Virginians*. Consult: Whitehead, *Original Anecdotes of the Late Duke of Kingston and Miss Chudleigh* (London, 1792); Trowbridge, *Seven Splendid Sinners* (ib., 1908); Pearce, *The Amazing Duchess* (ib., 1911).

KINGSTON, WILLIAM HENRY GILES (1814-80). An English novelist, famed as a writer of books for boys. A Londoner by birth, he lived long in Oporto, assisting his father in business

there and writing political articles that were translated for the Portuguese press and helped to conclude the commercial treaty with England (1842). For this he was knighted and pensioned by the government of Portugal, but he returned to his native land two years afterward, edited the *Colonist* and the *Colonial Magazine and East India Review*, lectured also on emigration, and strove to lighten the lot of seafaring men. *The Circassian Chief* (1844) was his first book. Out of his interest in emigration grew his *How to Emigrate* (1850). From 1850 he was chiefly engaged in writing books for boys and in editing juvenile annuals and periodicals. Among the best of his stories, which are more than 100 in number, may be mentioned—*Peter the Whaler* (1851); *The Cruise of the Frolic* (1860); *The Fireships* (1862); *Ben Burton* (1872); *The Three Midshipmen* (1873); *The Three Lieutenants* (1875); *The Three Commanders* (1876); *The Three Admirals* (1878); *Kidnapping in the Pacific* (1879). Besides accounts of his own travels in Europe and America, he published books about noted explorers—Columbus, Captain Cook, Livingstone, and others—about the *Kings and Queens of England* (1876), and about other historical personages.

KINGSTON-ON-THAMES, tēmz. A market town in Surrey, England, on the Thames, 11 miles southwest of Charing Cross (Map: England, F 5). It is a favorite residential district for London and has a free library, an asylum for soldiers' widows, a recreation ground of 14 acres, an industrial school for girls, and an endowed grammar school founded in the reign of Queen Elizabeth. The town owns a profitable market which occupies the ground floor of the town hall, an electric-lighting plant, and baths. Much garden produce is raised in the vicinity, and there are flour and oil mills, breweries, brick and tile works. Numerous Roman remains have been discovered in the vicinity; during the Saxon period the West Saxon kings were crowned at Kingston. The name is said to be derived from a stone in the market place upon which are inscribed the names of seven Anglo-Saxon kings who were crowned upon it, in the ancient chapel of St. Mary's, which existed until 1779. Pop., 1901, 34,375; 1911, 37,975.

KINGSTON-UPON-HULL. A town of England. See HULL.

KING STORK. In Æsop's fables, the king sent by Jupiter to the frogs when they were dissatisfied with King Log.

KINGS TOWN. An important seaport and favorite watering place of Ireland, on the south shore of Dublin Bay, 6½ miles southeast of Dublin (Map: Ireland, E 5). At the visit of George IV in September, 1821, its former name, Dunleary, was changed to Kingstown. Its fine harbor, with an area of 250 acres, accommodates vessels drawing 24 feet. There is steamship service to Holyhead and the principal Irish and British seaports. Coal, iron, and timber are imported, and cattle, corn, lead ore, and granite are exported. Pop., 1901, 17,356; 1911, 16,941.

KINGSTOWN. Capital of the island of St. Vincent, British West Indies (Map: West Indies, G 4). It is picturesquely situated at the foot of Mount St. Andrew, on the southwest coast, and has handsome public buildings and a good harbor. Pop., 1891, 4547; 1911, 4300.

KINGSWOOD. A town in Gloucestershire, England, 3½ miles northeast of Bristol. It is

an important shoemaking centre. Pop., 1901, 11,961; 1911, 12,700.

KING'S YELLOW. A term applied to a pigment which is a mixture of orpiment (ter-sulphide of arsenic) and arsenious acid. It is not a desirable color to use, as it is fugitive.

KINGTEHCHEN, king'té-chén', or **CHINGTECHEN** (originally Changnan). A large and important town in the Chinese Province of Kiangsi, 85 miles southeast of Kiukiang, and one of the *Five Chin*, or great marts of the country. It is specially noted for its potteries and as the seat of the porcelain manufactories, first established here in the reign period *Kingteh* (1004-07), when it received its present name. It is situated along the Ch'ang-an River, in a small plain surrounded by mountains, which supply the kaolin, petuntse, and fuel required in its 3000 furnaces. It was taken by the Taiping rebels in 1855 and was almost depopulated during their stay, which lasted until 1864. The population a century ago was estimated at 1,000,000, at present it is about 250,000. The Taiping rebels destroyed the former porcelain factories, and the present product is inferior in design, coloring, and workmanship. One of the factories, rebuilt in 1868, has a circuit of a mile, and consists of 72 buildings. The town itself is governed by a subprefect. The inhabitants are turbulent, and few foreigners visit the place. Consult: Medhurst, *A Glance at the Interior of China* (London, 1850); Julien, *Histoire et fabrication de la porcelaine chinoise* (Paris, 1856); E. R. Seidmore, *China: The Long-Lived Empire* (New York, 1900).

KING VULTURE. See CONDOR.

KING WILLIAM'S WAR. The name commonly given to that part of the struggle known in European history as the War of the League of Augsburg which was fought in America. From one point of view the War of the League of Augsburg was a war waged by the Grand Alliance against the ambitious schemes of Louis XIV for the territorial aggrandizement of France in Europe; from another it was the first of a series of conflicts, sometimes called the Second Hundred Years' War, between France and England for colonial supremacy. (See FRANCE; LOUIS XIV.) In America the active operations of the war were begun by Frontenac, then Governor of New France, who in the winter of 1689-90 sent out three expeditions, composed largely of Indians, against the border towns of New York and New England. One of these expeditions surprised and destroyed the town of Schenectady, near Albany, and massacred or carried into captivity many of the inhabitants; another brought a like fate to the village of Salmon Falls in New Hampshire; the third took in Casco in southwestern Maine and harried other settlements in northern New England. Aroused by the common danger, Massachusetts Bay, Plymouth, Connecticut, and New York, by invitation of Jacob Leisler (q.v.), de facto Governor of New York, sent delegates to a Colonial Congress, which met at New York in May, 1690, and discussed plans of attack and defense. The Congress determined to attempt the conquest of Canada and planned expeditions both by sea and land. The land expedition, composed chiefly of troops from Connecticut and New York under Fitz John Winthrop, failed miserably; the main body got no farther than the head of Lake Champlain, though a small detachment pushed on and raided La Prairie, opposite Montreal. The

fleet, under command of Sir William Phipps, who earlier in the year had led a successful expedition against Port Royal in Acadia, appeared before Quebec in October, 1690; but, owing to the failure of the English land expedition, the French were able to garrison the town with so strong a force that the English attack was easily repulsed. Phipps then gave up the attempt and with forces much diminished by disease and shipwreck returned home. The remainder of the war consisted chiefly of border raids, by which the French inflicted the greater suffering and loss, but without any substantial results being gained by either side. The struggle was brought to a brief pause in 1697 by the Peace of Ryswick. By its terms Louis XIV gave up, with a few exceptions, all the conquests he had made in Europe since 1678 and recognized William III as King of Great Britain, while there was to be a mutual restitution in America of all conquered territory. Consult: Francis Parkman, "Frontenac and New France under Louis XIV," in his *France and England in North America*, part v (Boston, 1877; new ed., 1903); Ernest Myrand, *Sir William Phipps devant Québec* (Quebec, 1893); S. A. Drake, *The Border Wars of New England, Commonly Called King William's and Queen Anne's Wars* (New York, 1897).

KINGWOOD. A very beautiful wood, used for ornamental work. It is exported from Brazil and is believed to be the wood of a species of *Dalbergia* of the family Leguminosæ. See DALBERGIA.

KIN'IC, or QUIN'IC, ACID (from Quichua *kina*, *quina*, bark, quinine), $C_6H_7(OH)_2COOH$. A hydroaromatic acid (see CARBON COMPOUNDS), occurring in cinchona bark, the coffee bean, and other vegetable products. It is soluble in water, crystallizes in large colorless prisms, and is optically active.

KINKAJOU (probably local native name), or **POTTO**. A South American tropical carnivore (*Potos*, or *Cerculeptes*, *caudivolvulus*) of the raccoon family (Procyonidae), formerly classed with lemurs on account of its woolly aspect, monkey-like dexterity, and strong prehensile tail. Its body is about 18 inches long, and its tail 12 inches; and it is clothed in soft fur, uniform yellowish brown in color, giving it a lemur-like prettiness, which, with its tamability, makes the little animal an attractive pet. It feeds on the eggs and young of birds, small animals, insects, honey and bees, fruits, and the like; and uses its forepaws with a dexterity almost equal to that of a monkey. It is found from central Mexico to southern Brazil.

KINKEL, kin'kel, GOTTFRIED (1815-82). A German poet and art critic. He was born at Oberkassel, near Bonn, Aug. 11, 1815, studied theology at Bonn, and was for some time a distinguished Protestant preacher. He lectured at various times, beginning with 1836, in the University of Bonn, first on ecclesiastical history and later on poetry and the history of art. Becoming involved in the revolutionary movements of 1848, he was imprisoned in the fortress of Spandau, whence, however, he escaped in November, 1850, with the assistance of Carl Schurz. Kinkel then came to America, but soon after returned to London, where he resided as a public teacher. In 1866 he went as professor of archaeology and the history of art to Zürich, where he remained till his death, Nov. 13, 1882. His principal works are two volumes of *Gedichte*

(1843; 7th ed., 1872); *Otto der Schütz, eine rheinische Geschichte in zwölf Abenteuern* (1846; 73d ed., 1894), a narrative poem; *Die altchristliche Kunst* (1845), which forms the first part of the unfinished *Geschichte der bildenden Künste bei den christlichen Völkern*; *Die Ahr, Landschaft, Geschichte und Volksleben* (1845); *Nimrod, ein Trauerspiel* (1857); *Mosaik zur Kunstgeschichte* (1876); *Tanagra, Idyll aus Griechenland* (1883).—Kinkel's wife, JOHANNA KINKEL, born at Bonn, July 8, 1810, a distinguished musician, wrote *Acht Briefe über den Clavierunterricht* (1852), and, together with her husband, *Erzählungen* (1849). She died in London, Nov. 15, 1858. Her novel, *Hans Ibeles in London*, was published posthumously in 1860. Consult: Strodtmann, *Gottfried Kinkel* (Hamburg, 1851); Henne am Rhyn, *Gottfried Kinkel, ein Lebensbild* (Zürich, 1883); Martin Bollert, *Georg Kinkels Kampfe um Beruf und Weltanschauung bis zur Revolution* (Bonn, 1913); id., "Kinkel vor dem Kriegsgericht," in *Preussische Jahrbücher*, vol. clv (Berlin, 1914).

KINLEY, DAVID (1861-). An American economist, born in Dundee, Scotland. He came to the United States with his father in 1872, graduated at Yale in 1884, and was principal of the high school at North Andover, Mass., for six years. While carrying on graduate work at Johns Hopkins (1890-92), he taught there and in the Woman's College of Baltimore (later Goucher College). He took his Ph D degree at the University of Wisconsin in 1893 and thereafter was connected with the University of Illinois as assistant professor of economics (1893-94), professor of economics, dean of the College of Literature and Arts, and director of the School of Commerce (1894-1906), and dean of the Graduate School. He was a member of the Illinois Industrial Insurance Commission in 1906-07 and of the Illinois Tax Commission after 1910 and in 1913 was president of the American Economic Association. His publications include: *The Independent Treasury of the United States* (1893), *Money* (1904); and monographs, prepared for the National Monetary Commission, on *The Use of Credit Instruments in Payments in the United States* and *The Independent Treasury and the Banks*.

KINNEY, COATES (1826-1904). An American journalist and poet, born at Kinney's Corners, N. Y., Nov. 24, 1826. He was educated at Antioch College, Ohio, but did not graduate. He was admitted to the bar (1856) and became connected editorially with journals in Xenia and Cincinnati, Ohio, Springfield, Ill., and elsewhere. He served in the Civil War as major and paymaster and was active in Ohio Republican politics, being a Senator in the State Legislature (1882-83). His verses were collected in *Ke-u-ka and Other Poems* (1855) and *Lyrics of the Ideal and the Real* (1888). One of his lyrics, "Rain on the Roof," as set to music was widely popular.

KINNEY, WILLIAM BURNET (1799-1880). An American politician and diplomat, born in Speedwell, N. J. He studied law after graduating at Princeton, became an editor in New-ark, where he founded the *Advertiser* in 1832, and was a prominent Whig. In 1851 he went to Turin as Minister to Sardinia. There and in Florence, where he lived for some time after the close of his mission, he worked on a history of Tuscany, which was not completed. He married

in 1841 Elizabeth Clementine Stedman (q.v.) the author.

KINNICUTT, FRANCIS PARKER (1846-1913). An American physician, brother of Leonard Parker Kinnicutt. Born at Worcester, Mass., he graduated in 1868 from Harvard University and in 1871 from the College of Physicians and Surgeons (Columbia), where he became professor of clinical medicine in 1893. He served as consulting physician to a number of New York hospitals, as director of the Cancer Hospital and of the Children's Aid Society, and trustee of the General Memorial Hospital. He was president of the Association of American Physicians for the year 1906-07. With Dr N. B. Potter he edited the English translation of Sahli's *Clinical Diagnosis* (1905).

KINNICUTT, LEONARD PARKER (1854-1911). An American chemist and sanitarian, brother of Francis Parker Kinnicutt. Born at Worcester, Mass., he graduated from Massachusetts Institute of Technology in 1875 and studied at Heidelberg and Bonn (1875-79), at Johns Hopkins (1879-80), and at Harvard (Sc.D., 1882), where he was an instructor (1880-83), assistant professor (1883-85), and professor of chemistry (1885-90). Thereafter he was director of the chemistry department of Worcester Polytechnic Institute. In 1903 he was appointed consulting chemist of the Connecticut Sewage Commission. He came to be one of the best-known experts in the United States on sewage disposal and water supply. Besides serving as associate editor of the *Journal of Industrial and Engineering Chemistry* after 1908, he published *Sewage Disposal* (1910).

KIN'NOR (Heb. *knnor*, harp, lyre). A musical instrument of the ancient Hebrews, similar to the zither or harp and provided with 32 strings.

KI'NO (apparently of East Indian origin). The concrete exudation of certain tropical trees, especially the *Pterocarpus marsupium* (natural order Leguminosae), growing in the East Indies, which yields East Indian kino. East Indian kino is the kind which now chiefly occurs in commerce and is the ordinary kino or gum kino of the shops. It is in small, angular, glistening fragments—the smaller reddish, the larger almost black. Thin pieces are ruby red. It is brittle and easily powdered, has no smell, but a very astringent taste. Bengal kino is a similar astringent substance, produced by *Butca frondosa*. Botany Bay kino is the produce of *Eucalyptus resinifera*.

Kino is soluble in alcohol, but very sparingly soluble in ether and in cold water. Its chief constituents are: kinotannic acid, $C_{18}H_{18}O_8$, pyrocatechin, $C_6H_4(OH)_2$, and kino red, $C_{28}H_{22}O_{11}$, a product of oxidation of kinotannic acid. The astringency of kino is mainly due to its containing kinotannic acid, and in consequence of this property it is employed in medicine in certain forms of diarrhoea. The medicinal tincture of kino forms an excellent gargle for the relaxation of the uvula; it contains kino, glycerin, alcohol, and water. Kino is employed in the East Indies as a cotton dye, giving to the cotton the yellowish-brown color known as nankeen.

KINO. See KENO.

KINO, kē'nō. The Italian form of the name of Eusebius Kühn (q.v.).

KINROSS-SHIRE. The second smallest county of Scotland, lying between the counties

of Perth and Fife (Map: Scotland, E 3). Area, 82 square miles. It is a level plain, almost surrounded by hills. It is well cultivated and has coal, limestone, and sandstone. It manufactures plaids, shawls, and linen goods. Capital, Kinross. Pop., 1801, 6700, 1851, 9000; 1901, 6981; 1911, 7527.

KINSALE. A seaport town and summer resort of County Cork, Ireland, picturesquely situated at the head of Kinsale harbor, on the Bandon estuary, 14 miles south of Cork (Map: Ireland, C 8). It is partly built on the slope of Compass Hill and has steep, irregular streets. The chief relics are Charles Fort, built in 1677, and the church of St. Multose. The harbor will take vessels of 20 feet draft. Kinsale is the headquarters of a large mackerel-fishing fleet. It dates from the Norse invasion. It was captured by the Spaniards in 1601 and was regained by the English in 1602. Pop., 1901, 4250; 1911, 4020.

KIN'STON. A city and the county seat of Lenoir Co., N. C., 77 miles by rail southeast of Raleigh, on the Neuse River, and on the Atlantic Coast, the Carolina, the Norfolk Southern, and the Kinston railroads (Map: North Carolina, E 2). It has the Rhodes Military Institute, a public library, fine post-office and high-school buildings, and the Hermitage Mansion, once the State capitol. The city is surrounded by a productive agricultural region, largely devoted to cotton and tobacco cultivation, and is an important tobacco market, with several large warehouses, packing establishments, stemmeries, etc. There are also cotton mills, carriage and wagon works, a turpentine distillery, foundry and machine shops, lumber, knitting and silk mills, and manufactures of boxes, barrels, shingles, etc. The water works and electric-light plant are owned by the municipality. Pop., 1900, 4106; 1910, 6995.

KINTYRE, kin'tir'. A peninsula in Scotland. See CANTIRE.

KINYOUN, kin'yūn, JOSEPH JAMES (1860-). An American pathologist. He was born at East Bend, N. C., and graduated from Bellevue Hospital Medical College (New York University) in 1882. From 1886 to 1902 he served in the United States Marine Hospital Service. At Georgetown University he was professor of hygiene and bacteriology (1890-92), professor of pathology and bacteriology (1892-99), and after 1903 special lecturer on immunity, serum therapy, and preventive inoculations. In 1896 Georgetown gave him the degree of Ph.D. He served as professor of pathology at George Washington University in 1907-09 and was afterward pathologist of the Washington Tuberculosis Hospital.

KINZIE, kin'zi, JOHN (1763-1828). An American pioneer, born in the city of Quebec, Canada. When he was very young, his father died and left the family in great poverty. John left home as a boy of 10 and went to New York City. After a wandering life, during which he traded with the Indians in the West and Middle West, he finally (1804) settled in Illinois on the site of the city of Chicago. There he bought out the French fur trader Le Mai and established himself, the first white man to make his home permanently at this point, in a cabin built in 1779 by a native of San Domingo, Jean Baptiste Point de Saible. Consult Kinzie, *Wau-bun, or the Early Day in the Northwest* (New York, 1856).

KIOPHILI. See KIUPHILI.

KIOSK, kē-ōsk'. Primarily, in Oriental architecture, a pavilion of a permanent character; by extension, in Turkish usage, any small palace of light and elegant architecture, as distinguished from a *serai*, or great palace. The group of buildings forming the residence of the former Sultan Hamid II as the Bosphorus is known as the Yildiz Kiosk. The Bagdad Kiosk in the Seraglio Park at Constantinople is a charming summer palace, decorated with Persian tiles both outside and inside; the Chinili Kiosk, another small palace in the same park, built c.1463, is now a museum of Ottoman art. In European architecture the word designates an open pavilion of a decorative character; in Paris it is applied to the permanent newspaper stands along the boulevards and similar structures.

KIOTO. See KYOTO.

KIOWA, kē'ō-wā. An important plains tribe, apparently constituting a distinct linguistic stock. The popular name is a corruption of *Kā-v-gwā*, the name by which they call themselves. According to their own traditions, which are borne out by those of other tribes, they at one time lived in the Rocky Mountains of western Montana on the headwaters of the Missouri and Columbia rivers. From this position they moved out into the plains and formed an alliance with the Crow. Following the buffalo herds and pressed by the Sioux and Cheyenne, they moved southward, halting for a time in the Black Hills, then making their camps upon the Platte, and later still upon the upper Arkansas. Here they first came into contact with the Comanche farther to the south, with whom they carried on war for some time, but with whom they became confederated in 1790. At a later period the Kiowa made peace with the Cheyenne and Arapahoe. They were noted as one of the most hostile and unruly tribes of the plains and maintained almost constant warfare along the American and Mexican frontiers until the great Treaty of Medicine Lodge, Kans., in 1867, when, with the Cheyenne, Arapahoe, Comanche, and Kiowa Apache, they consented to give up their free range and come upon reservations in what is now Oklahoma. They were slow to move, however, and it required a winter campaign by Custer the next year to bring them in. In 1874 they again broke out, together with most of the other four tribes, but were subdued the next year by Mackenzie, who shot their ponies, confiscated their arms, and deported a number of their chiefs and warriors to Florida. Since then they have remained quietly upon their reservation, which was thrown open by treaty in 1901, so that they are now in law American citizens. Their great annual ceremony was the sun dance (q.v.), and their great tribal palladium was the Taimé, a stone image somewhat resembling a human figure. They were subdivided into six recognized bands and had a well-organized military order of six degrees. They have also a pictograph calendar running back some 70 years. Associated with them, and constituting one of the six bands of their tribal circle, is a small tribe of Athapascan stock, locally known as Kiowa Apache. The term is a misnomer, however, excepting as it indicates the remote stock affinity; for these people, who call themselves *Nadishah-dina*, have come down along the plains and have no tradition of a time when they were not associated

with the Kiowa. The greatest strength of the Kiowa at any time within a century was probably less than 1800. They number now about 1100, while the Kiowa Apache number 160. Consult Mooney, "Calendar History of the Kiowa Indians," in *Seventeenth Report of Bureau of American Ethnology* (Washington, 1898).

KIOWA APACHE. See KIOWA.

KIP, LEONARD (1826-1906). An American author, born in New York, and educated at Trinity College, Hartford. He studied law and long practiced in Albany, where he was for 10 years president of the institute. Besides contributing to periodicals, he published, *California Sketches* (1850); *Volcano Diggings* (1851); *Enone* (1866); *The Dead Marquise* (1873); *Hannibal's War* (1878), *Under the Bells* (1879); *Nestlenook* (1880).

KIP, WILLIAM INGRAHAM (1811-93). An American Protestant Episcopal bishop. He was born in New York City, of Breton ancestry, graduated at Yale in 1831 and at the General Theological Seminary in 1835, was rector of St. Peter's, Albany, from 1838 to 1853, and in the latter year was chosen Missionary Bishop of California. He became Bishop four years later. Among his works are: *The Lenten Fast* (1843); *Early Jesuit Missions in North America* (1846); *The Catacombs of Rome* (1854); *The Olden Time in New York* (1872); *The Church and the Apostles* (1877), *Double Witness of the Church* (22d ed., 1904).

KIPCHAK, kip-chāk'. A Mongol khanate. See KIPTCHAK.

KIPLING, (JOSEPH) RUDYARD (1865 -). An English novelist, short-story writer, and poet. He was born in Bombay, India, Dec. 30, 1865, the son of John Lockwood Kipling, who was for many years connected with the schools of art at Bombay and Lahore. His mother, Alice Macdonald, whom Kipling called "the wittiest woman in India," was the daughter of a Methodist clergyman at Endon, Staffordshire. Her two sisters married Sir Edward Poynter and Sir Edward Burne-Jones (qq.v.). At the age of five Kipling was brought to England, and in 1878 he entered the United Services College at Westward Ho, Devonshire. While there he edited the *College Chronicle*, for which he wrote verse and prose. On his school life he drew freely for the incidents narrated in *Stalky & Co.* (1899). Returning to India, he was on the editorial staff of the *Lahore Civil and Military Gazette* (1882-87) and afterward assistant editor of the *Pioneer* at Allahabad (1887-89). To these and other papers he contributed satirical verses and sketches of Anglo-Indian life. *Schoolboy Lyrics* (1881) was followed by *Echoes* (1884), *Departmental Duties* (1886), and *Plain Tales from the Hills* (1887). The last two represent the best of his early work in verse and prose. *Soldiers Three*, *The Story of the Gadsbys*, *In Black and White*, *Under the Deodars*, *The Phantom 'Ruckshaw* and *Other Tales*, and *Wee Willie Winkie and Other Child Stories*, all published at Allahabad during 1888-89, collectively assured the author high rank as a short-story writer. His travel sketches written at this time were collected in 1899 in two volumes as *From Sea to Sea*.

Having now become well known in India, Kipling visited England and the United States in search of a publisher, but failed at first. His impressions of America, originally contributed

to the *Pioneer*, were afterward published in New York, under the title *American Notes* (1891). It was in 1890 that Kipling, arriving in London, suddenly found himself famous. From 1892, when he married the daughter of H. Wolcott Balestier of New York and settled in Vermont, he remained in the United States until 1896. To this second period of his life belong *Barrack Room Ballads* (1892) and *The Seven Seas*, poems (1896), and these stories: *Life's Handicap* (1890); *The Light that Failed* (1891); *The Naulahka*, written in collaboration with Wolcott Balestier, Kipling's brother-in-law (1891); *Many Inventions* (1893); the two *Jungle Books* (1894-95), stories; *Captains Courageous* (1897); *The Day's Work* (1898). While again in the United States in 1899, Kipling suffered an acute attack of pneumonia and was not expected to live. After his recovery he visited the scene of war in South Africa. In 1907, during travel in Canada, especially in the Canadian Northwest, he was enthusiastically received. His two poems "The Recessional" (1897), written on the occasion of Queen Victoria's Diamond Jubilee (included in *The Five Nations*, 1903), and "The White Man's Burden" became especially famous. Kipling's later fiction writing includes *Kim* (1901), a story of life in India; *The Just-So Stories*, a book for children (1902); *Traffics and Discoveries* (1904); *Puck of Pook's Hill* (1906); *Actions and Reactions* (1909); *Rewards and Fairies* (1910). *A History of England*, written with C R L Fletcher, appeared in 1911. *Songs from Books*, including some of his earliest verse, in 1912, and *The Harbor Watch*, a play, in 1913. The complete *Writings in Prose and Verse of Rudyard Kipling*, the Outward Bound edition, began to appear in New York in 1897. Up to 1915, 25 volumes had been published, the twenty-fifth in 1911. The illustrations for this edition were modeled in clay by Kipling's father and photographed for reproduction. In the Seven Seas edition (Garden City, N Y) 18 volumes out of 23 had appeared up to 1915. This edition contains, among other material not previously in book form, Kipling's "Letters to the Family," written during his Canadian tour in 1907.

Perhaps the most original genius among English writing novelists of the later nineteenth and early twentieth century, for more than a decade Kipling enjoyed an extraordinary and world-wide popularity. Although before he was 40 years old his work began to decline in freshness and power, much of his earlier writing has the qualities of permanency. He represents admirably certain phases of the spirit of his age and of the Anglo-Saxon race. Vigor, audacity, and efficiency are the virtues that most appeal to him, and they characterize his own thought and his literary style to a remarkable degree. A genuine master of language, though with certain limitations, he ranges, according to his theme, from the brutal speech of the barracks and the vivid slang of the smoking room to a diction that is noble and majestic. He has an almost inspired instinct for the essential thing, for that which stands out as typical of the whole, and he can flash it upon the minds of his readers in startling and impressive felicity of phrasing.

In his prose he is at his best in telling of India, whether it be the India of the Anglo-Indian or the mysterious India of the native; he has, in fact, done for India what Sir Walter

Scott in his own entirely different way did for the Scottish Highlands: he has peopled the country of his birth with scores of men and women who will long be remembered. His *Soldiers Three* are as sure of immortality as the *Three Musketeers* of Dumas, with whom they have often been compared, and his *Gadsbys*, *Hauksbees*, and *Stricklands* are hardly inferior. Such stories as "The Man who Would be King," "The Drums of the Fore and Aft," and "Without Benefit of Clergy" are in a fair way to become classics. The long romance *Kim* will stand among Kipling's great achievements. No one else could have written it, and it displays the whole of India—its vagueness, its multitudinous vastness, and its incomprehensibility—in one great panoramic revelation. The two *Jungle Books* represent a tour de force of another kind, but no less extraordinary. They take us back to the older India of unbroken jungle, haunted by memories of the world's long infancy when man and brute were not yet clearly differentiated, but still crouched down together on the breast of mother earth. As a poet, Kipling has written with a spirit and a lyric swing that have caught and held the world's attention. In many of his poems he has so accurately voiced the feelings and aspirations of British imperialism as to have been styled "the Laureate of the Empire." Many of his stanzas and lines and burning phrases are graven in the national memory. Because of his past glory, if not his present fame, his position to the poet-laureateship, the British government was severely criticized in 1913 for failing to appoint him to the post instead of Robert Bridges (q.v.). In 1907, however, fitting recognition of his distinction had come in the award of the Nobel prize for literature, and he received honorary degrees from McGill, Durham, Oxford, and Cambridge universities.

Kipling's imperialistic propaganda and his practice of giving the government advice on every subject relating to the colonies eventually drew him into the shallower waters of political life. For the Liberal Unionists he made his first stump speech in 1912. It was not a striking success from the standpoint of originality, which apparently was all that his critics were looking for; but it may have helped induce the Bordesley Liberal Unionist Association in June, 1914, to seek Mr. Kipling as their candidate for Parliament. The offer was not accepted. Because he had given offense as a violent Ulsterite, Kipling twice aroused Nationalist comment in the House of Commons. In 1911 certain members held that the Fletcher-Kipling *History of England* should be proscribed as a textbook for use in the schools because it contained "libels on the Irish race." The President of the Board of Education declined to take the action suggested, and in 1912 Sir Rufus Isaacs, the Attorney-General, refused before Parliament to prosecute Kipling for sedition because of his verses entitled "Ulster." At an Anti-Home Rule demonstration on Tunbridge Wells Common in May, 1914, Kipling was the principal speaker, and in the same month he contributed a sonnet to the first issue of the *Covenanter*, the organ of the League of British Covenanters. His attitude on woman suffrage, certainly on the militant variety, was declared in 1911 by a poem which, with its refrain of "The female of the species is more deadly than the male," cre-

ated a great stir. At the time of England's entrance into the European War in 1914 Kipling's poem "For All we Have and Are" compared favorably with other verse produced by the occasion. Early in 1915 it was announced that Kipling would write marching songs for the soldiers, to be set to old English tunes. A war story, *Swept and Garnished*, which appeared in the *Century* magazine, was highly praised.

Bibliography. J. M. Barrie, "Mr. Kipling's Short Stories," in *Contemporary Review* (London, 1891); Edmund Gosse, *Questions at Issue* (ib., 1893); F. L. Knowles, *A Kipling Primer* (Boston, 1899); Richard Le Gallienne, *Rudyard Kipling: A Criticism* (New York, 1900), not wholly sympathetic, but interesting, and containing a bibliography with much information, William Archer, "Mr. Kipling's Stories," in *Poets of the Younger Generation* (London, 1902); "Bibliography of Kipling to 1903," in *English Illustrated Magazine* (new series, vol. xxx, ib., 1904); P. E. More, "Kipling," in *Schulburne Essays* (2d series, New York, 1905); W. A. Young, *Dictionary of the Characters and Scenes in the Stories and Poems of Rudyard Kipling, 1886-1911* (ib., 1911); Ralph Durand, *Handbook to the Poetry of Rudyard Kipling* (ib., 1914); R. T. Hopkins, *Rudyard Kipling: A Survey of his Literary Art* (London, 1914).

KIPPER (probably from Scotch *kyp*, jutting point, hook, a variant of *cop*, Ger. *Kopf*, head, in allusion to the projecting gristle on the lower jaw of a male salmon after spawning; less probably from *kyp*, hide of a young beast, from ME *kyp*, Icel. *kypa*, to snatch, Dutch *kypen*, to snatch, hatch). Originally, in Scotland, a salmon after the spawning period; but as fish at this time are not good for food if fresh, they are usually split open, salted, and dried; hence kipper or kippered salmon came to be generally used to denote smoked or pickled salmon. The transfer of this process to the herring caused the term to mean, in England, and especially about Yarmouth, the headquarters of the herring fishery, a herring so treated.

KIPTCHAK, kĕp-chăk', or **KAPTCHAK**. A Mongol khanate, better known as the Kingdom of the Golden Horde, ruled by the successors of Genghis Khan (died 1227). At the time of its greatest expansion it extended from the Dnieper in Europe far into Central Asia. Its capital, Sarai, founded in 1242, was situated on the Volga near the modern Tsaritsyn. It was plundered by Timur in 1395. In the course of time the Kingdom of the Golden Horde split up into independent khanates, which fell one by one into the power of the Russians. See **GOLDEN HORDE**.

KIRBY, kĕr'bi, WILLIAM (1759-1850). An English entomologist, born at Winesham Hall, Suffolk. He graduated from Gonville and Caius College, Cambridge (B.A., 1781; M.A., 1815), and, having been ordained, obtained the living of Barham, Suffolk, where he spent his life. One of the first fellows of the Linnean Society, to whose *Transactions* he made many important contributions, he became famous for his entomological writings, of which the most notable are a monograph on English bees, *Monographia Apium Angliæ* (2 vols., 1802); *Introduction to Entomology* (1825-26), with William Spence; and one of the Bridgewater Treatises, *The History, Habits, and Instincts of Animals* (1835). In 1837 he was elected honorary president of the Entomological Society of London.

KIRBY, kĕr'bi, WILLIAM (1817-1906). A Canadian author, born at Kingston-upon-Hull, England. He came to Canada with his parents in 1832. Settling at Niagara, Ontario, in 1839 he conducted the *Niagara Mail* for 20 years and was collector of customs there from 1871 to his retirement in 1895. Kirby was the author of the best Canadian historical romance yet written, *Le Chien d'Or*, or *The Golden Dog* (1877; new ed., Boston, 1896). The romance takes its name from a tablet on the façade of a building in Quebec, representing a couchant dog gnawing the thigh bone of a man, and deals with the great struggle of the French to hold the Canadas against the English. Besides other prose works, Kirby also published *U. E.* (1859), an epic poem in Spenserian stanzas depicting incident and character in the times of the United Empire Loyalists, and *Canadian Idylls* (new ed., 1894). Consult T. G. Marquis, "English-Canadian Literature," in *Canada and its Provinces*, vol. vi (Toronto, 1914). See also **CANADIAN LITERATURE**.

KIRCHBACH, kĕrk'bag, HUGO EWALD, COUNT (1809-87). A German soldier, born at Neumarkt, Silesia. In 1826 he entered the Prussian infantry service as an ensign, distinguished himself during the campaign of 1866 by his successes at Nachod, Skalitz, and Schweinschadel, and in 1870 was appointed general commanding the Fifth Army Corps. In the Franco-Prussian War he played an important part, particularly at Weissenburg, Worth, Sedan, and in the siege of Paris, when he repulsed the French at the last great sortie of Jan. 19, 1871. He retired from the army in 1880 and was ennobled in the same year.

KIRCHBACH, WOLFGANG (1857-1906). A German poet and critic. He was born in London, but was educated at Dresden and Leipzig, studying music first and then history and philosophy. In 1888 he settled in Dresden, where he was editor of the *Magazin für Literatur des In- und Auslandes*. From 1896 he resided in Berlin. He was one of the beginners in the literary movement called *Das jüngste Deutschland*, largely influenced by folk literature. Among his works may be mentioned *Salvator Rosa* (1880), a novel; *Die letzten Menschen* (1889), a drama, *Das Leben auf der Walze* (1892, 20th ed., 1907), a novel, *Die Lieder vom Zweirad* (1900). Consult A. Stoessel's article in *Nord und Süd* (Breslau, 1895).

KIRCHENTAG, kĕrk'en-tag, EVANGELISCHER (Ger., evangelical church day). An association of ministers and laymen of the Lutheran, German Reformed, United Evangelical, and Moravian churches in Germany, for the promotion of the interests of religion, without reference to their denominational differences. The first meeting took place in 1848, at Wittenberg, in the church to which Luther affixed his theses. Subsequent meetings were held, at first annually, later at irregular intervals, till 1872. The strict Lutherans never joined the movement; Hengstenberg, Stahl, and their followers withdrew in 1857, and some years later Lipsius, Schenkel, and their group. No conferences have been held since 1872.

KIRCHER, kĕrk'ēr, ATHANASIUS (1601-80). A Roman Catholic scholar. He was born at Geisa, near Fulda, May 2, 1601, became a Jesuit (1618), and professor of mathematics, philosophy, and Oriental languages at the University of Würzburg. In 1653 he fled from the disorder

ders of the Thirty Years' War to France and spent two years in the Jesuits' college at Avignon in the study of antiquities. He was preparing to return to Austria as professor of mathematics at Vienna when he received an order to repair to Rome and obeyed. In 1637 he accompanied Cardinal Frederick of Saxony to Malta and was received with great honor by the Knights of St. John. For eight years he was professor of the Collegium Romanum at Rome, and then, without a professorship, continued his archaeological studies. He died in Rome, Nov. 28, 1680. He collected a splendid museum of antiquities, which he left to the Roman College. He was a man of extensive and varied erudition and a copious writer, his works written in Rome occupying 44 folio volumes. Of his works the most important are *Prodromus Coptus sive Aegyptiacus* (1636), *Edipus Aegyptiacus* (1652-55), *Mundus Subterraneus* (1664), *China Illustrata* (1667); *Latium* (1671), with maps and figures. Consult his *Life* by Behlan (Heiligenstadt, 1874) and Brischar (Wunzburg, 1876).

KIRCHHOFF, kĕrk'hōf, ALFRED (1838-1906). A German geographer, born at Erfurt. He was educated at Jena and Bonn, from 1871 to 1873 was lecturer on geography at the Kriegsakademie of Berlin, and in the latter year was appointed to the chair of geography in the University of Halle. In 1904 he retired. His writings include *Schulbotanik* (1865), *Pflanzen- und Tierverbreitung* (1890), *Unser Wissen von der Erde* (1886-93), *Menschen und Erde* (1901); *Schulgeographie* (20th ed., 1908); *Erdkunde für Schulen* (2 parts, 17th ed., 1912-13).

KIRCHHOFF, GUSTAV ROBERT (1824-87). A German physicist, born at Königsberg. He studied natural philosophy and mathematics at the University of Königsberg. In 1850 he became professor of physics at Breslau, in 1854 at Heidelberg, and from 1875 until his death filled the chair of physics at the University of Berlin. His researches in thermodynamics and in several other branches of physical science have been of great value. For example, a widely known theorem, referred to as "Kirchhoff's equation," shows how the change of the vapor pressures of mixtures with the temperature is influenced by the heat evolved or absorbed when the given mixture is first formed from its components. But Kirchhoff's principal achievement was the discovery, jointly with Bunsen, of the spectroscope. The discovery was perfected in 1859 and was published under the title *Untersuchungen über das Sonnenspektrum und die Spektren der chemischen Elemente*. Kirchhoff's *Gesammelte Abhandlungen* were published in 1882 and 1891.

KIRCHHOFF, kĕrk'hōf, JOHANN WILHELM ADOLF (1826-1908). An eminent German classical scholar, born at Berlin. He was professor in the University of Berlin from 1865 till his death. Kirchhoff's scientific studies covered a wide range in linguistics, antiquities, and Greek epigraphy. In each field his work was distinguished. Of his very numerous publications the most important are: *Umbrische Sprachdenkmäler* (1849-51); *Die Stadtrecht von Bantua* (1853); *Euripides* (1855), the first critical edition based on a careful collation of all the manuscripts; *Die homerische Odyssee und ihre Entstehung* (1859); *Die Composition der Odyssee* (1869); *Ueber die Entstehungszeit des herodotischen Geschichtswerkes* (2d ed., 1878); *Studien zur Geschichte des griechischen Alphabets*

(4th ed., 1887), the most important work on the subject; *Thucydides und sein Urkundenmaterial* (1895). His works further include many monographs on Athenian financial administration, Greek literature, etc. He edited Plotinus (1856), *Æschylus* (1880), the Pseudo-Xenophontic *Respublica Atheniensium* (3d ed., 1889), etc. He was editor of the Christian inscriptions in the fourth volume of the *Corpus Inscriptionum Græcarum* (1859) and of the *Corpus Inscriptionum Atticarum*, vols. I and IV (Berlin, 1873-), and was an editor of *Hermes* (1866-81).

KIRCHMANN, kĕrk'mân, JULIUS VON (1802-84). A German jurist and philosopher, born near Merseburg. He was educated at Leipzig and Halle. In 1846 he was made state's attorney in the Criminal Court of Berlin and two years afterward was chosen to the Prussian National Assembly, where he played a prominent part as a member of the left centre. He was soon made vice president of the Court of Appeals at Ratibor. From 1871 to 1876 he was a member of the German Reichstag. He first attracted attention as a philosopher by his brochure *Die Wertlosigkeit der Jurisprudenz als Wissenschaft* (1848). His other philosophical writings include: *Ueber Unsterblichkeit* (1865); *Ästhetik auf realistischer Grundlage* (1868); translations of and comments on parts of Aristotle, Bacon, Grotius, Hume, Leibnitz, and Spinoza, and a remarkable edition of Kant in the *Philosophische Bibliothek*, edited by him (1868 et seq.), and of Hobbes, *De Cive* (1873). His philosophy was an attempt to mediate between realism and idealism. Consult Lasson and Meineke, *Julius von Kirchmann als Philosoph* (Halle, 1885).

KIRCHNER, kĕrk'nĕr, THEODOR (1824-1903). A German composer, born at Neukirchen, Saxony. From 1838 to 1842 he studied in Leipzig under J. Knorr (piano) and K. F. Becker (organ and theory). He subsequently was a pupil of J. Schneider in Dresden and of the Leipzig Conservatory for a short time, becoming in 1843 organist at Winterthur. From 1862 to 1872 he was a teacher in the music school at Zurich, then became director of the Würzburg Conservatory (1873-75), and finally in 1890 settled in Hamburg. Schumann and Mendelssohn were his friends, and Kirchner was especially influenced by the former's music. His compositions are mostly for the piano, and his preludes, caprices, and nocturnes are charming.

KIRCHWEY, GEORGE WASHINGTON (1855-) An American legal scholar, born at Detroit, Mich. In 1879 he graduated from Yale University, in 1882 was admitted to the bar, and for 10 years practiced law at Albany, N. Y. He was professor of law in Union University, and dean of the Albany Law School (1889-91); and in Columbia University professor of law (1891-1901), dean of the School of Law (1901-10), and Kent professor of law after 1902. Professor Kirchwey was a pioneer in the introduction of the case method of studying law. In 1912 he had an important part in the organization of the Progressive party. He became an associate editor of the *American Journal of International Law*, president of the New York Society of Criminal Law and Sociology, and a commissioner on prison reform for the State of New York. In 1915 he delivered the Clark memorial lectures at Amherst College, on "The Relation of Law and Legislation to Social Con-

trol." He edited *Historical Manuscripts, State of New York* (1887-89), had charge of the law department of the New International Encyclopedia, and published *Readings in the Law of Real Property* (1900) and *Select Cases and Other Authorities on the Law of Mortgage* (3 parts, 1900-02).

KIRGHIZ, kër-gèz', or KIRGHIZ-KAZAKS. The chief part of the Central Asiatic group of Turko-Tataric (Mongolian) peoples. They number, altogether, some 3,000,000, ranging over the great steppe and marshy area from the borders of European Russia to those of western China, northward beyond the Sir-Darya. The ancient division of the Kirghiz into hordes is still retained. The Great Horde has its habitat partly in Russian and partly in Chinese territory in the Yarkand-Tashkent-Alatau region; the Middle Horde, or Siberian Kirghiz, chiefly in the Balkash-Irtish-Tobol region; the Little Horde, in the steppes north of the Aral and Caspian seas, to the west of the Middle Horde. To the Little Horde belong the Kirghiz of the Volga-Ural steppes in European Russia, who for the last century have wandered over that country. The Kirghiz are for the most part characteristically a nomadic, tent-dwelling people, living by their flocks and herds, though recently some of them (e.g., a part of the Little Horde) have taken somewhat to agriculture. By language the Kirghiz belong to the Turkic stock, and the folk literature of the various hordes evidences no little poetical spirit and a marked sense of humor. They preserve some of the old characters of the Turko-Tataric race, and beneath the creed of Islam, which so many of them have accepted, the more ancient Shamanism is often scarcely hidden. Some few of the western Kirghiz are Buddhists. The Kara-Kirghiz (black Kirghiz) of the Thian Shan region between the Lake of Issik Kul and the Kuen-lun Mountains, who number some 350,000, are known to the Russians as Diko-kamenije Kirgisi (wild mountain Kirghiz), and have a less favorable reputation than some of the other sections of this widely distributed people. Their language is thought to be more archaic, their folk poetry more sui generis, while they have also retained more perfectly some of the ancient customs and beliefs of the stock. The name Kirghiz has often been loosely employed in the sense of 'nomad,' and not all of the tribes and fractions of tribes thus denominated are of Turko-Tataric ancestry. The Kirghiz also possess, in all probability, not a little Aryan and other non-Mongolian blood. The Kara-Kirghiz are, perhaps, the most Mongolian of all, representing best the Turko-Tataric type of the milieu of Turkestan—brachycephalic, medium-statured (or a little taller), and of somewhat darker complexion.

Bibliography. Besides the Russian studies of Grodekow (1889), Kharuzin (1889-95), etc., reference may be made to Seeland, "Les Kirghis," in the *Revue d'Anthropologie* (Paris, 1886), which summarizes a good deal of the Russian literature on the subject; also to Shaw, *Visits to High Tartary* (London, 1871), Vambéry, *Die primitive Kultur des turko-tatarischen Volkes* (Leipzig, 1879); Hellwald, *Centralasien* (ib., 1880); Vambéry, *Das Türkenvolk* (ib., 1885); Jules Brocherol, "The Kirghiz," in *Scottish Geographical Magazine*, vol. xviii (Edinburgh, 1902); Richard Karntz, *Unter Kirgisen und Turkmenen, aus dem Leben der Steppe* (Leipzig, 1911), containing a bibliography.

KIRILLITSA, kè-ril'it-sa, or **CYRILLITSA**. See CYRILLIC ALPHABET.

KIRIN, kè-rén' (Chin. *Ki-lin*, lucky forest). The central one of the three provinces of Manchuria, bounded on the north by the Sungari River, on the east by the Usuri and the Russian Maritime Province, on the south by Chosen and the Province of Szechwan, and on the west by the Sungari. Area 110,000 square miles (Map: China, N 3). It consists of two parts—a prairie or level part lying within the loop of the Sungari, and a mountainous part. The chief mountain is the Shan-a-lin (otherwise known as the Ch'ang Peh Shan, or Ever-White Mountain) with peaks from 8000 to 10,000 feet high and covered with snow. In general the trend of the ranges in this mountainous part is from northeast to southwest, as in China proper. The chief rivers are the Sungari, the Hurka, and the Usuri. The first of these is the most important. It rises on the northwest side of the Shan-a-lin, flows north by west, receives many tributaries, passes the city of Kirin, then west to about lat. 44° 30' N., where it enters Mongolia and takes a northwest direction, passes Petuna, where it receives the Nonni, flows east and finally northeast, tending to north until it reaches the Amur. The Usuri River, in lat. 44° N., long. 131° E., receives numerous tributaries and after a course of 500 miles also joins the Amur. The Hurka River, not far from the source of the Sungari, takes a northerly direction past Ninguta, receives two important tributaries from the west, and joins the Sungari at the city of Sansing (which lies on the south bank of the Sungari, east bank of the Hurka, and southwest bank of the Kung-ho, which here joins the others). From Petuna east the country is a level plain, broken with insignificant undulations, cultivated in the vicinity of the villages, but elsewhere covered with a sea of waving tall grass.

The soil of the province is fertile, the chief products are pulse, millet, maize, barley, potatoes, and the poppy. Tigers abound in the mountainous part, and black bears, wild boars, panthers, and polecats are numerous, eagles are also found, and the game includes pheasants, quail, and grouse. The population of Kirin is estimated at 2,060,700. The city of Kirin (q.v.) is the capital; pop., about 80,000. Sansing (q.v.) is an open port. Other treaty ports are Harbin (q.v.), Hunchun (pop., 3700), Lungchingtsun (pop., 500), and Suifenho (pop., 2000). The total trade of Hunchun in 1912 amounted to 766,798 taels, of Lungchingtsun 472,381 taels, and of Suifenho 22,276,587 taels (See MANCHURIA.) The province on the north is called Tsitsihar, or in Chinese Heilungkiang, or Black Dragon River.

KIRIN. The capital of the province of the same name in Manchuria, beautifully situated at the foot of hills and on the Sungari River, about 250 miles west of Vladivostok (Map: China, N 3). The chief article of trade is tobacco, raised in that region and exported to China. Timber and furs are important. There are many squares beautifully ornamented with flowers in pots. The streets are paved with wood blocks; wood is abundant and cheap, and boats and small junks are built here. There is a large lumber trade. Kirin is called by the Chinese Ch'uen Chang (navy yard). Silver is mined, and there are powder works and an arsenal. The population is variously estimated at 80,000 to 120,000.

KIRIBI, kâ-rê-rê. See **CARIBI**.

KIRIU, kâ-rê-oo. A town of Japan. See **KIRYU**.

KIRJATH-SEPHER, kâr-jâth-sê-fêr. According to Josh. xv. 15 (Judg. i. 11), the older name of a Canaanitish town, which the Hebrews called Debir. It was located in the hill country of Judah. An attempt has been made to identify it with the modern el-Dhabariyeh, four or five hours southwest of Hebron, but there are serious objections to this identification. Kirjath-Sepher, explained as a Hebrew name, would seem to mean 'book-city.' It has therefore been claimed that the city contained the public records of the Canaanites or of earlier history or was the location of a great library. The analogy of Sippara in Babylonia, which seems to mean 'book-(city),' has been quoted, and there is nothing impossible in a Judean town having had a library of some sort in connection with its sanctuary long before the Hebrew invasion. But old manuscripts of the Greek version give the second part of the name as *Sophar*, and this is in harmony with the Egyptian *shu-pa-ra*, which corresponds to Hebrew *Sopher*, and would give the meaning 'town of the Scribe.' The city is said to have been inhabited by the Anakim (Josh. xi. 21) and to have been the seat of a king (x. 39; xii. 13) before it was conquered by Othniel (Judg. i. 23; cf. Josh. xv. 17) or Joshua (Josh. x. 38 f.). It was included among the cities of refuge (Josh. xxi. 25). Consult: W. Max Müller, *Asien und Europa* (Leipzig, 1893); G. F. Moore, *The Book of Judges* (New York, 1895); T. K. Cheyne, in *Encyclopædia Biblica*, vol. ii (ib., 1901); Eduard Meyer, *Die Israeliten und ihre Nachbarn* (Halle, 1906).

KIRK, kerk, EDWARD NORRIS (1802-74). An American Congregational clergyman. He was born in New York City, Aug. 14, 1802, graduated at Princeton in 1820, and, after studying law for 18 months, entered the 'free school' at the same place, where he was employed for some time as an agent of the American Board of Commissioners for Foreign Missions and in 1828 became pastor of a newly organized Presbyterian church in Albany, N. Y. In 1839 he became secretary of the American and Foreign Evangelical Society; in 1842, pastor of the newly organized Mount Vernon Congregational Church in Boston, where he preached until 1871, when ill health compelled him to retire from active service. In 1856 he visited Paris, as an agent of the American and Foreign Christian Union, to establish Protestant worship there. His style of preaching was fervent and pungent, and he was unusually successful in developing and directing revivals. He published *Memorial of Dr. Chester* (1829), *Canon of Holy Scriptures* (1862), and two volumes of *Sermons* (1840, 1860). He died March 27, 1874. Consult D. O. Mears, *Life of Edward Norris Kirk* (Boston, 1877).

KIRK, ELLEN WARNER OLNEY (1842-). An American novelist, sometimes writing under the pen name Henry Hayes, born at Southington, Conn., the daughter of Jesse Olney the geographer. She was married in 1879 to John Foster Kirk (q.v.), and settled in Germantown, Pa. Her novels, which deal chiefly with Eastern American life, include: *Love in Idleness* (1876); *Through Winding Ways* (1880); *A Lesson in Love* (1883); *A Midsummer Madness* (1884); *The Story of Margaret Kent* (1886); *Sons and Daughters* (1887); *A Daughter of Eve*

(1889); *Walford* (1890); *Cyphers* (1891); *Maidens Choosing* (1892); *The Story of Lawrence Garth* (1895); *A Revolutionary Love Story* (1898); *Dorothy Deane* (1899); *Dorothy and her Friends* (1900); *Our Lady Vanity* (1901); *A Remedy for Love* (1902); *The Apology of Ayliffe* (1904); *Marcia* (1907).

KIRK, JOHN FOSTER (1824-1904). An American bibliographer and historian, born at Frederickton, N. B. He was educated at Halifax and Quebec, came in 1842 to Boston, and was secretary of the historian W. H. Prescott from 1847 to 1859, accompanying him to Europe. At that time and afterward he contributed frequently to the *North American Review* and the *Atlantic Monthly*. From 1870 to 1886 he edited *Lippincott's Magazine* and from 1885 to 1888 lectured on European history in the University of Pennsylvania. He wrote a *History of Charles the Bold* (3 vols., 1863-68), edited the *Works of W. H. Prescott* (1870-74), and compiled a supplement to *Allibone's Dictionary of Authors* (1891).

KIRKBRIDE, THOMAS STORY (1809-83). An American neurologist born in Morrisville, Bucks Co., Pa. He graduated from the medical department of the University of Pennsylvania in 1832 and became in the same year resident physician to the Friends' Asylum for the Insane at Frankfort. In 1833 he was appointed to the ward for the insane in the Pennsylvania Hospital in Philadelphia. Upon the establishment of the New Pennsylvania Hospital for the Insane he was made its first superintendent. He raised more than \$350,000 for a hospital for male patients, which was completed in 1859. He was the first physician in the country to place the sexes in separate institutions and in his annual reports made many suggestions for the improvement of hospital construction and organization. He published: *Rules and Regulations of the Pennsylvania Hospital for the Insane* (1850); *The Construction, Organization, and General Management of Hospitals for the Insane* (1854); *Appeal for the Insane* (1854).

KIRKBY KENDAL. See **KENDAL**.

KIRKBY-LUNN, kerk'bi-lün, LOUISA (1873-). A noted English dramatic contralto, born at Manchester. She began her vocal studies with the organist Dr. Greenwood, and in 1893 entered the Royal College of Music, where she completed her training under Albert Visetti. While still a pupil, she made her debut at Drury Lane as Margaret in Schumann's *Genoève*. In 1897-99 she was a member of the Carl Rosa Opera Company. For two years after her marriage to W. J. K. Pearson, in 1899, she appeared only on the concert platform, but in 1901 she returned to the stage. The following year she sang at the Metropolitan Opera House, where her Ortrud and Brangäne created a particularly deep impression. In 1904 she sang the rôle of Kundry in Savage's production in English of Parsifal. During the season of 1907-08 she was again at the Metropolitan. During the years 1912-14 she made a tour of Australasia and New Zealand.

KIRKCALDY, kër-kà'di. A seaport and market town in Fifeshire, Scotland, on the Firth of Forth, 15 miles north of Edinburgh (Map: Scotland, E 3). Its industries are flourishing and owe prosperity to the abundance of water power; they include the spinning of flax, tow, and jute, the bleaching and weaving of linen yarns, mechanical and marine engineering, iron founding,

and the manufacture of oilcloth and wax cloth (linoleum), nets, leather, pottery, flour, and beer. The manufacture of oilcloth was begun at Kirkcaldy in 1847 and was for a time a monopoly. Its harbor and wet-dock accommodations are commodious; it has an important coasting trade and direct export trade with the United States, which is represented by a consular agent. Its chief exports are coal, coke, and patent fuel; its imports, timber, paper-making materials, cottonseed, flaxseed, flax, stone, cork, etc. With its suburbs it extends for nearly 4 miles and is called the "lang town." It has several fine churches, a town hall, public library, and memorial hall to Adam Smith, who was born here. Kirkcaldy is mentioned as early as 1176 and was created a royal burgh in 1450. Pop., 1901, 34,079; 1911, 39,601.

KIRKCALDY OF GRANGE, SIR WILLIAM (c.1520-73). A Scottish politician. He assisted in the murder of Cardinal Beaton at St. Andrews in 1546, was captured by the French in 1547 and imprisoned in Normandy until 1550, and he then served as the secret agent of Edward VI. After the accession of Mary to the English throne he took up arms for the King of France. In 1557 he was allowed to return to Scotland, where he became one of the best known Protestant leaders. He was concerned in the murder of Rizzio, contributed to the Queen's defeat at Langside, but later took up Mary's cause. He was denounced by John Knox, who had been his friend, as a "murderer and throat cutter." The Regent Morton with the aid of English troops captured Kirkcaldy in his fortified castle, and he was subsequently hanged.

KIRKCUDBRIGHTSHIRE, kër-kōō'brī-shēr. A county of southwest Scotland, bounded north and northeast by the counties of Ayr and Dumfries, east and south by the Solway Firth and west by the County of Wigton (Map: Scotland, D 4). Area, 899 square miles. The land is chiefly given to oats and grass for pasture. Great attention is paid to the rearing of cattle. The county produces much granite. Principal towns, Kirkcudbright (the county town), Maxwelltown, Castle Douglas, and Dalbeattie. Pop., 1901, 39,383; 1911, 38,367.

KIRKDALE CAVE. A locality in Yorkshire, England, famous for fossil mammals. The cave, discovered in 1821, was described by Buckland in his *Reliquiæ Diluvianæ*. The remains of the rhinoceros, tiger, bear, hyena, and of many other animals long since extinct in England have been found in the stalagmitic deposit lining the floor. See CAVE

KIRKE, kërK, SIR DAVID (1596-c.1656). An English adventurer, born at Dieppe, France. His father, Gervase Kirke, a wine dealer, returned to England on account of the religious wars in France and became one of the "merchant adventurers" of London. He was associated with Sir William Alexander in a project to capture New France and settle Nova Scotia. The exclusive right to the fur trade was given to them, and letters of marque to prey upon French commerce were issued. In 1627 three privateers were fitted out under the command of David Kirke and his brothers Lewis and Thomas. These made a demonstration before Quebec and captured about 20 French ships filled with settlers and supplies for the relief of the colony. In 1629, with a larger fleet, he captured another French vessel and forced Champlain to surrender Quebec. Charles I, however, had made peace

with France and gave back the conquests, though Kirke was knighted for his services. In 1637 Kirke received a grant of all Newfoundland, which had been abandoned by Lord Baltimore, and removed there to develop the fisheries. After the execution of Charles I the grant was revoked by the Council. By the assistance of Claypole, Cromwell's son-in-law, Kirke regained part of the grant. Consult Henry Kirke, *First English Conquest of Canada* (London, 1871).

KIRKE, EDMUND. See GILMORE, JAMES ROBERTS

KIRKE, PERCY (c.1646-91). An English soldier. He was an ensign in the army by 1666, seven years afterward was with the Duke of Monmouth in France, and by 1680 was colonel of the Second Tangier Regiment, enlisted in London largely by himself. He was Governor of Tangier (1682-84) and on its evacuation returned to England with his soldiers, whom, as brigadier general, he led at the battle of Sedgemoor (1685). He became notorious for his hanging of Monmouth sympathizers and his troops were called, from their badge, Kirke's Lambs. In the revolution of 1688 he supported William III, who made him a major general, and the following year he was sent to the relief of Londonderry, of which he was made Governor. He upheld the Orange standard also at the battle of the Boyne and the siege of Limerick and was made lieutenant general in 1690. In 1691 he died in Brussels, having been sent to carry on a campaign in Flanders.

KIRKE'S LAMBS. See KIRKE, PERCY.

KIRKINTILLOCH, kërK'in-til'lōK. A municipal and police burgh and market town in Dumbartonshire, Scotland, on the Forth and Clyde Canal, 7 miles northeast of Glasgow (Map: Scotland, D 4). It manufactures chemicals, muslin, print, and bleached goods, lumber and machinery; there are coal and iron mines near by. The town owns the water supply. The burgh had its origin in a fort on Antoninus' Wall, called Caerpentulach (the fort at the end of the ridge), of which the present name is supposed to be a corruption. It became a burgh of barony in 1170 under William the Lion. Pop., 1901, 10,502; 1911, 11,932

KIRK-KILISSEH, kërK-k'el'sā' (the forty churches). A town of European Turkey, in the Vilayet of Edirneh (Adrianople), in an agricultural district, 35 miles east-northeast of Adrianople (Map: Balkan Peninsula, F 4). It is a chief point on the route of traffic between Constantinople and the Balkans. There are a number of mosques and Greek churches. The estimated population is 16,000, consisting of Bulgarians, Turks, Greeks, and Jews. It was the scene of the first important Bulgarian victory over the Turks (Oct. 24, 1912) in the Balkan War (q.v.). Ceded by Turkey to the Balkan allies in accordance with the Treaty of London (May 30, 1913), it was easily reoccupied by the Turks in the course of the Second Balkan War (July, 1913) and formally restored to them by the Treaty of Constantinople (Sept. 29, 1913).

KIRKLAND, CAROLINE MATILDA STANSBURY (1801-64). An American author, born in New York City. She was married in 1827 to Prof. William Kirkland, of Hamilton College, Clinton, N. Y. With her husband she migrated to Michigan in 1839 and as the results of her pioneer life wrote: *A New Home, Who'll Follow* (1839), *Forest Life* (1842), and *Western Clearings* (1846), published under the pseudonym Mrs.

Mary Clavers. In 1842 she returned to New York, where she established a boarding school and contributed to the magazines. Her chief work, besides those already cited, was *Holidays Abroad, or Europe from the West* (1849). Mrs. Kirkland's best book is *A New Home*, which is written in the style of Miss Mitford's *Our Village*. It possesses considerable charm and gives a valuable picture of frontier life.

KIRKLAND, JAMES HAMPTON (1859–). An American educator. He was born at Spartanburg, S. C., and graduated (A. B., 1877, A. M., 1878) from Wofford College, where he was afterward tutor in Greek and Latin for three years and professor of Greek and German for two years. He then traveled and studied in Europe, receiving the degree of Ph.D. from Leipzig in 1885. In 1886 he was made professor of Latin at Vanderbilt University and in 1893 became chancellor of that institution. Besides monographs and contributions to educational periodicals, he published *Study of the Anglo-Saxon Poem Called by Grem "Die Hollenfahrt Christi"* (1885) and edited the satires and epistles of Horace (1893). He received the degree of LL.D. from the universities of North Carolina and Missouri and from Wesleyan University and the degree of D. C. L. from the University of the South (1902).

KIRKLAND, JOSEPH (1830–94). An American novelist, the son of Caroline Matilda Kirkland (q.v.), born in Geneva, N. Y. He was educated in the schools of Michigan, then went with his parents to New York, and after 1856 resided in Illinois. He served in the Civil War and was promoted to be major. He then engaged in coal mining in Illinois and Indiana and used his experience for writing fiction on social subjects while practicing law in Chicago. Two novels of pioneer life in Illinois, *Zury, the Meanest Man in Spring County* (1887), and *The McVeys* (1888), are graphic studies. Noteworthy, also, are *The Captain of Company K* (1889) and *The Story of Chicago* (2 vols., new ed., 1904).

KIRKLAND, SAMUEL (1741–1808). An American missionary to the Iroquois Indians, born at Norwich, Conn. He studied at Princeton and received his degree in 1765, though he had left college the previous autumn to visit the Senecas and learn their language. After living among them for a year and a half he was ordained at Lebanon in 1766 and was given a commission by the Congregational church as missionary to the Indians. He then took up his residence among the Oneidas, who occupied a central position among the Six Nations and whom he considered the noblest of the Iroquois. His mission was highly successful, and so great did his influence among the Indians become that at the outbreak of the Revolution he persuaded the Oneidas and Tuscaroras to remain neutral, despite the efforts of Sir William Johnson and of the other Indian nations to make them join the British, and finally when, during the second year of the war, they would remain quiet no longer, he prevailed upon them to support the Americans. He became an army chaplain, served at Fort Schuyler, undertook many dangerous missions, and was with General Sullivan on the Susquehanna in 1779. At the close of the war he returned to the Oneidas and in 1793 founded the Hamilton Oneida Academy at Clinton, N. Y., an institution for the education of American and Indian youth. In 1810 the academy was chartered as Hamilton College (q.v.). Kirkland's letters, journals, and a vindication,

which he wrote in answer to a complaint from the Indians in 1794, contain much valuable information concerning the Iroquois. Consult S. K. Lothrop, "Life of Samuel Kirkland, Missionary to the Indians," in Jared Sparks, *Library of American Biography*, vol. xxv (N. S., Boston, 1848).

KIRKMAN, kĕrk'man, MARSHALL MONROE (1842–). An American authority on railways. Born in Illinois, in 1856 he entered the service of the Chicago and Northwestern Railway, of which he was made vice president in 1889. His numerous writings are for the most part grouped in a series known as *The Science of Railways* (1894, revised and republished in 17 vols and 3 portfolios, 1909 et seq.). The titles of the various volumes are: *Locomotive, Engine Failures, and Motive Power Department; Engineer's and Fireman's Handbook; Air Brake: Its Construction and Working; Shops and Shop Practice* (2 vols.), *Cars: Their Construction, Handling, and Supervision; Organization of Railways, and Financing, Passenger Train Traffic and Accounts; Freight Traffic; Building and Repairing Railways; Operating Trains, Electricity Applied to Railways; Locomotive Appliances, Collection of Revenue, General Accounts and Cash; Safeguarding Railway Expenditures; Railway Rates and Government Ownership. Locomotive Portfolio; Car Portfolio; Air Brake Portfolio*. Kirkman wrote also: *The Romance of Gilbert Holmes* (1900); *Iskander* (1903); *The Alexandrian Novels* (3 vols., 1909); and a *History of Alexander the Great* (1913).

KIRKPATRICK, kĕrk-păt'rik, ALEXANDER FRANCIS (1849–). An English theologian and Old Testament scholar. He was born in Lewes, the son of a clergyman, and was educated at Haileybury and at Trinity College, Cambridge, of which he was assistant tutor in 1871–82 and junior dean in 1876–82. He was Cambridge Whitehall preacher in 1878–80 and Lady Margaret preacher in 1882 and 1893, examining chaplain to the Bishop of Winchester in 1878–90 and in 1895–1903 and to the Bishop of Rochester in 1890–95, regius professor of Hebrew and canon of Ely in 1882–1903, and Lady Margaret professor of divinity in 1903–06. In 1906 he became dean of Ely. He was general editor for Old Testament and Apocrypha of the *Cambridge Bible* and contributed to it commentaries on Samuel (1880–81) and Psalms (5 vols., 1880–1901) and also published *The Divine Library of the Old Testament* (1891) and *The Doctrine of the Prophets* (1892).

KIRK'S ANTELOPE. See BENI-ISRAEL.

KIRKSVILLE, kĕrks'vil. A city and the county seat of Adair Co., Mo., 203 miles northwest of St. Louis, on the Wabash and the Quincy, Omaha, and Kansas City railroads (Map: Missouri, D 1). The city is the commercial centre for a fertile agricultural district, has coal mines, and manufactories of shoes. It has a fine courthouse, a government building, and a State normal school. It is the seat of the original school of osteopathy. Kirksville was first settled in 1840 and adopted the commission form of government in 1914. The water works are owned and operated by the municipality. Pop., 1900, 5966; 1910, 6347.

KIRKTON, kĕr'ton. See CREDITON.

KIRKUP, kĕrk'up, THOMAS (1844–1912). An English economist. He was educated at Edinburgh University and at the universities of Göttingen, Berlin, Tübingen, Geneva, and Paris.

He contributed extensively on Socialism, history, and economics to the *Encyclopædia Britannica*, to Chambers's *Encyclopædia*, and to other works of reference; he edited many educational works and wrote: *An Inquiry into Socialism* (1887; new ed., 1909); *History of Socialism* (1892; 5th ed., rev., 1913); *South Africa, Old and New* (1903); *Progress and the Fiscal Problem* (1905); *Primer of Socialism* (1908). Kirkup was regarded as an authority on Socialism.

KIRK WALL, kĕrk'wāl. A municipal and police burgh and market town of Scotland, capital of the Orkney Islands, on the northeast coast of Mainland (Map: Scotland, F 2). It is the seat of the superior courts of law for Orkney, and its harbor accommodates an important shipping trade. It has an annual fair, libraries, and a museum; also regular steam communication with Leith, Aberdeen, and Lerwick, the chief town of the Shetland Islands. Its chief imports are timber and flour, and herring is the principal article of export. Its chief building, the cathedral of St. Magnus, a fine cruciform (1138) structure in mixed Norman and Gothic, is excellently preserved. In the choir of this cathedral service is still held. Around it are the ruins of the King's castle, and the Bishop's palace. Pop., 1901, 3711; 1911, 3810.

KIRKWOOD, kĕrk'wud, DANIEL (1814-95). An American astronomer, born in Maryland. He was a teacher of mathematics in the Academy of York Co., Pa., from 1838 to 1843, when he was appointed principal of the Lancaster High School, where he remained until 1848, resigning to accept a position in the Pottsville Academy. In 1849 he announced his recently discovered analogy between the periods of rotation of the primary planets. In 1851 he was appointed professor of mathematics in Delaware College, and in 1854 he was chosen president of the same institution. He served in this capacity until 1856, when he resigned to take the chair of mathematics in the University of Indiana at Bloomington. His researches in regard to the nebular hypothesis attracted wide attention among scientific men. His published works include *Comets and Meteors: Their Phenomena in All Ages and their Mutual Relations and the Theory of their Origin*, and a valuable paper on *The Nebular Hypothesis and the Approximate Commensurability of the Planetary Periods*.

KIRKWOOD, SAMUEL JORDAN (1813-94). An American political leader and cabinet officer, born in Harford Co., Md. He was educated in the John McLeod Academy at Washington, D. C., and in 1835 settled in Richland Co., Ohio, where, after studying law, he was admitted to the bar in 1843. His first official position was that of prosecuting attorney of Richland County (1845-49), and in 1850-51 he was a member of the Ohio Constitutional Convention. In 1855 he removed to Johnson Co., Iowa, where for a time he devoted himself to various manufacturing enterprises. He was elected in 1856 to the State Senate and in 1860-64, during the Civil War, was Governor. Under his supervision 50 regiments of infantry and cavalry were enlisted, and the State's quota kept always more than filled. In 1866 he was elected to the United States Senate to fill the unexpired term of James Harlan (q.v.), who had resigned to enter Lincoln's cabinet. In 1876-77 he was for a third time Governor of Iowa; was again United States Senator until March, 1881; and

from then until April, 1882, when he retired from public life, was Secretary of the Interior in President Garfield's cabinet.

KIRMAN, kĕr-mā', or **KERMAN** (Lat. *Caramania*). A southern province of Persia, bounded by the provinces of Yezd and Khorasan on the north, Seistan and Baluchistan on the east, the Gulf of Oman on the south, and Farsistan on the west (Map: Asia, G 5). The area is estimated at 65,000 square miles. The north and northeast parts are occupied by the Desert of Kirman, which forms a part of the great central Desert of Lut. The southern portion, although mountainous, is equally arid and barren, save in narrow valleys and the small tract of Nurmanshir. The climate is cold and damp in the mountains and hot in the lower parts and not generally healthful. Cattle raising is extensively pursued, and the camels and goats of Kirman breed are celebrated for their long hair. Cotton, gum, and dates are raised; silk and wool weaving and the making of fine shawls are the chief occupations. The population, estimated at about 500,000, is largely Persian. The capital is Kirman (pop., 60,000).

KIRMAN, kĕr-mān', or **KERMAN**. The capital of the Persian province of the same name, situated in a fertile region at an altitude of nearly 6000 feet (Map: Asia, G 6). It is fortified, has extensive bazars, the remnants of its once flourishing trade; also post and telegraph offices, and two mosques, the Masjid i Jama (fourteenth century) and Masjid i Malik (eleventh century). It has manufactures of silk and woolen goods, especially shawls, carpets, and felts, and has some trade, being a centre for several caravan routes. The population is estimated at 40,000, consisting of Persians, Armenians, Hindus, Kurds, and Jews.

KIRMANSHAH, or **KERMANSHAH**, kĕr'mān'shā'. An important town of Persia, capital of the Province of Kirmanshah, on a small river at an altitude of 5100 feet (Map: Asia, Central, B 5). It is 250 miles west-southwest of Teheran. Surrounded by half-ruined walls, Kirmanshah is noted for its extensive bazars, carpets, and horses. In the vicinity are larger gardens; opium is produced. The commercial importance of the town is greatly increased by its location between Bagdad and Hamadan. It carries on a good trade in wheat, barley, fruit, and gum. About 21 miles from Kirmanshah is the ruined city of Behistun (q.v.). Population, once estimated at 80,000, is now about 40,000.

KIRMESSE, or **KERMESSE**. See KERMIS.

KIRNBERGER, kĕrn'bĕrk-ĕr, JOHANN PHILIPP (1721-83). A German musical theorist, born at Saalfeld, Thuringia. His studies included the violin, organ, and theory, and were carried on under J. P. Kellner, H. N. Gerber, Meil, and J. S. Bach. From 1741 to 1750 he was a private teacher in Poland; but on his return to Germany in 1751 he became a member of the royal band in Berlin, and three years later kapellmeister to Princess Amalie, a post which he retained till his death. He had many distinguished pupils and was famous for his extensive musical researches. Most of his somewhat elaborate theories have been disproved, but his best work, *Die Kunst des reinen Satzes* (1774-76), still retains some interesting material. As a composer, he is unimportant. He died in Berlin.

KIROUMBO. See KIRUMBO.

KIRSCH, or **KIRSCHWASSER**, kërsh'väs'sër (Ger., cherry water). A liqueur produced in the Black Forest and Switzerland and much used in Germany. It is made from cherries, gathered when quite ripe, freed from their stalks, and pounded in a wooden vessel, but without breaking the stones. They are then left to ferment, and when fermentation has begun, the mass is stirred two or three times a day. Later the kernels are crushed and added. By distillation kirschwasser is obtained. Kirschwasser is sometimes called cherry brandy, but the common cherry brandy is made by mixing brandy with the juice of cherries. See LIQUEUR.

KIRSCH, JOHANN PETER (1861-). A German Catholic Church historian, born at Dippach in Luxemburg. He was educated at Luxemburg and in Rome, where in 1888 he became head of the newly established Historical Institute of the Gorresgesellschaft. In 1890 he became professor in the University of Fribourg. Kirsch revised Hefele's work on Church history (1891), (1893) (1894) and with Dreyer, Grimme, Büchi, De Waal, and Ehrhard edited periodicals on Church history, especially of Switzerland. Among his books are: *Die christlichen Kultusgebäude im Altertum* (1893); *Die Rückkehr der Päpste Urban V. und Gregor XI. von Avignon nach Rom* (1898); *Lehre von der Gemeinschaft der Heiligen im christlichen Altertum* (1900); *Illustrierte Geschichte der katholischen Kirche* (1903 et seq.), with Luksch, *Die heilige Caelia* (1910).

KIRSCHNER, Kërsh'nër, ALOISIA (1854-). An Austrian novelist, born in Prague and favorably known under her pseudonym Ossip Schubin, which she borrowed from Turgenyev's novel *Ielena*. Brought up on her parents' estate at Lochkov, she afterward spent several winters in Brussels, Paris, and Rome, receiving there, undoubtedly, many inspirations for her clever descriptions of artistic Bohemianism and international fashionable society, which are her favorite themes. An uncommonly keen observer, her great gift for striking characterization, frequently seasoned with sarcasm, is especially apparent in her delineations of the military and aristocratic circles in Austria. Owing to rapid production, her works are of unequal merit, the earlier being the best. The more important of her novels and stories include: *Ehre* (1882; 7th ed., 1893); *Die Geschichte eines Genies: Die Galbruzzi* (1884); *Unter uns* (1884; 4th ed., 1892); *Gloria Victis* (1885; 3d ed., 1892); *Erlachhof* (1887); *Es fiel ein Reif in der Frühlingsnacht* (4th ed., 1901); *Asbein, aus dem Leben eines Virtuosen* (1888; 4th ed., 1901), and its sequel, *Boris Lensky* (1889; 3d ed., 1897), probably her most meritorious work; *Unheimliche Geschichten* (1889); *O du mein Oesterreich!* (1890; 3d ed., 1897); *Flut Polonä* (1893); *Toter Frühling* (1893); *Gebrochene Flügel* (1894); *Die Heimkehr* (1897); *Slawische Liebe* (1900); *Marska* (1902); *Refugium Peccatorum* (1903); *Der Gnadenschuss* (1905); *Der arme Noki* (1906); *Primavera* (1908); *Miserere nobis* (1910). Consult Erich Schmidt's article, in the *Deutsche Literaturzeitung* (Berlin, 1892). Several have been translated into English, including *Peterkins: The Story of a Dog* (1906).

KIRTLAND, kër'tland, JARED POTTER (1793-1877). An American physician and naturalist, born in Wallingford, Conn. In 1815 he completed the medical course at Yale, while there

having also studied botany under Ives and mineralogy and zoölogy under Silliman. He practiced at Durham, Conn., until the death of his wife and daughter, in 1823, and afterward in Poland, Ohio, became professor of the theory and practice of medicine in the Ohio Medical College and in 1837 an assistant on the geological survey; and from 1843 to 1864 was professor in the Cleveland Medical College, of which he was a founder. Kirtland was a skilled taxidermist and an enthusiastic fruit grower, but he is best known for his zoölogical studies. He discovered parthenogenesis in insects and the distinction of sex in the Unionide and made valuable researches on the fresh-water fishes of Ohio. During the Civil War he served as an examining surgeon for recruits at Columbus and Cleveland.

KIRTON, kër'ton. See CREDITON.

KIRUMBO, kër-rûm'bô, or **KIROUMBO** (Malagasy name). A remarkable picarian bird of Madagascar and adjacent islands, of which one species exists, constituting the genus *Leptosoma* and the family Leptosomatidae. They are roller-like in their appearance and habits, have brilliant plumage, especially in the male, and are inhabitants of forests. See Plate of KINGFISHERS, MOTMOTS, ETC.

KIRWAN, kër'wan, RICHARD (1733-1812). An Irish scientist, born in Cloughballymore, County Galway. He was educated at Poitiers, France, and in the Jesuit College at Saint-Omer and was called to the Irish bar in 1766, but after two years' practice devoted himself to the study of the natural sciences and was made a member of the Royal Society in 1780. For a series of papers read before the Royal Society he received the Copley medal in 1782 and was presented with a gold medal by the Royal Dublin Society for obtaining the Leskeyan minerals for the society's museum. Besides contributions on chemistry, mineralogy, and agriculture to the *Proceedings* of many scientific societies, he published: *Elements of Mineralogy* (1784); *An Estimate of the Temperature of Different Latitudes* (1787); *Geological Essays* (1799); *An Essay on the Analysis of Mineral Waters* (1799); *Logick* (1807); *Metaphysical Essays* (1811). At first an adherent and defender of the theories of the phlogistic school (see CHEMISTRY, History), Kirwan had by 1791 adopted the truer views of Lavoisier.

KIRYU, kër-yôô'. A town of Japan, situated in the Prefecture of Gumma, 81 miles by rail north-northwest of Tokyo (Map: Japan, F 5). Its chief product is silk, and there is a large satin mill, equipped with French machinery. Pop. estimated at 35,000.

KIS-BECSKEREK. See BECSKEREK.

KISFALUDY, kish'fô-lu-di, KÁROLY (CHARLES) (1788-1830). An Hungarian dramatist, younger brother of Sándor Kisfaludy. He was born at Tét, Feb. 5, 1788. His first enterprise in literature was the editing of a periodical, *Aurora*. After a few years spent in military service he took to painting, but was unsuccessful. In 1817 he took up his residence in Pest and published in rapid succession a series of poems, tales, dramas, and comedies, which secured for him the highest popularity as an author. His comedies, as *The Suitors*, *The Murderer*, etc., gave humorous scenes from contemporary life. The best of them were translated by Gaál (*Theater der Magyarén*, Bonn, 1820). Of his tragedies the

best is *Irene* (1820; Ger. trans. by J. Hornvânazky, 1868). Kisfaludy founded the periodical *Szepirodalmi Szemle* (Belletristic Review), which exerted great influence on Hungarian writers. He is considered the founder of the modern national drama of Hungary. The Kisfaludy Society, so named in honor of the brothers, was established in 1836 and has rendered important services to Hungarian literature. For Kisfaludy's life, consult Bánóczy (Budapest, 1882), who also edited the seventh edition of his *Works* (6 vols., Budapest, 1893).

KISFALUDY, SÁNDOR (ALEXANDER) (1772-1844). An Hungarian poet, who exercised a great influence on the development of the language and literature of his native country. He was born at Sümeg, County of Zala, Sept. 27, 1772; studied at Raab and Pressburg and, after serving in several campaigns in the Austrian army and passing through a period of captivity in Provence, retired to his paternal estate to devote himself to literature and farming. The first part of his lyrical masterpiece, *Himfy szerelme* (Himfy's Loves; translated into German by Máilath), which appeared anonymously in 1801, was received with unbounded applause. It won him the name of the Hungarian Petrarch. On the publication of the second part, in 1807, the author threw aside his mask. In the same year he published his *Regék a magyar elvídőből* (Legends of the Olden Time in Hungary; trans. into German by Gaál, Vienna, 1820, and by F. Machik, Budapest, 1863). These are marked by depth of feeling and by elegance and simplicity of style. His epic poem *Gyula szerelme* (Julius's Love, 1825) was also translated into German by Gebell-Ennsburg (Dresden, 1893). Kisfaludy attempted tragedy and took Schiller as his model. Some of his historical dramas are worthy of mention, e.g., his *Hunyadi János* and *Kún László* (Ladislás the Cumanian). The best edition of his works appeared in Budapest, 1892. He died at Sümeg, Oct. 28, 1844.

KISH, DYNASTY OF. See **BABYLONIA, History.**

KISHINEV, ké'shé-nyéf. The capital of the Government of Bessarabia, Russia, situated on the Byk, a tributary of the Dniester, 86 miles northwest of Odessa (Map: Russia, C 5). It is built on an uneven site. It has two Gymnasias, a seminary for priests, a library, and a botanical garden. It is the residence of a bishop. The population is very mixed, consisting of Moldavians, Russians, Jews, Bulgarians, Tatars, etc. In 1912 it amounted to 125,876, of whom 41 per cent were Jews. The city, which owes its prosperity to the fact that it is the centre of the rich Province of Bessarabia, contains a magnificent statue of Alexander II, erected in 1886, and a monument to the poet Pushkin. The extensive gardens produce great quantities of plums, which are dried and exported, and there is a flourishing trade in wine, tobacco, tallow, grain, wool, soap, and flour, all locally produced. Kishinev is first mentioned in the beginning of the fifteenth century. It was annexed to Russia in 1812. The town was the scene of an unprovoked massacre of Jewish inhabitants, April 19-20, 1903, by a mob with the connivance of the authorities. The slaughter at Kishinev was the first of a series extending throughout Russia for several years. A second massacre took place in November, 1905. See **RUSSIA.**

KISHM, ké'sh'm. An island off the south coast of Persia, situated in the Strait of Ormuz

(Map: Asia, Central, F 9). It is oblong in shape and has an area of over 500 square miles. The surface is mostly rocky and barren, but in some parts grain, dates, grapes, and melons are produced. There are deposits of sulphur and rock salt. The inhabitants are engaged chiefly in fishing. The population is about 20,000. The capital, Kishm, situated at the east end, has a population of about 500.

KISH'ON (Heb. *Kishôn*; perhaps connected with Ar. *kāsa*, to bend, though a derivation from *kish*, or *kais*, the name of a god, is not impossible). The ancient name of a river of central Palestine, called El-Mukatta by the modern Arabs (Map: Palestine, C 2). The river rises on Mount Gilboa and, after running northwest through the Plain of Esdraelon (q.v.), falls into the Mediterranean at the southern end of the Bay of Acre. Its upper portion is dry during the summer, the perennial stream forming but a small part of its course near the sea. In the rainy season, however, the river often acquires the force of a torrent, sweeping all before it. The Kishon was the scene of two notable events recorded in the Old Testament—the overthrow of Sisera and his army (Judg. iv. 7 et seq.) and the destruction of the prophets of Baal by Elijah (1 Kings xviii. 19-40). In 1799 a battle was fought on its banks between the French and the Turks.

KISKÖRÖS, kish-kê'rësh. A town of Hungary. See **KÖRÖS.**

KISKÚNFÉLEGYHÁZA, kish'kúon-fá'led-y'-há-zó. A town of Hungary. See **FÉLEGYHÁZA.**

KISMARTON, kish'mór'tón. See **EISENSTADT.**

KISS. See **SALUTATION.**

KISS, kis, AUGUST (1802-65). A German sculptor. He was born near Pless in Upper Silesia and studied at the Berlin Academy and under Rauch. He first acquired fame by the model of his "Mounted Amazon Attacked by a Tiger," executed in marble in 1842 for Louis I of Bavaria, afterward cast in bronze by Fischer and erected on the portico of the Museum of Berlin. This is his masterpiece and shows the best qualities of his work—dramatic action and the fine treatment of animals. His other principal works are as follows: an equestrian statue of Frederick the Great (1847), at Breslau; two statues of Frederick William III. at Potsdam and Königsberg (1851); "St. Michael Overthrowing the Dragon," in the castle of Babelsberg; a colossal statue of "St. George Slaying the Dragon," in the courtyard of the Old Palace (Schlosshof) at Berlin. The six bronze statues of Prussian generals in the Wilhelmsplatz, Berlin, are by him—four after former marble statues, two (those of Winterfeldt and Schwerin) after his own designs. His last work was a marble group of "Faith, Hope, and Charity," completed by Blüser and presented by his widow to the National Gallery of Berlin, which possesses other important works by him.

KISS, kish, JÓZSEF (former name, **KLEIN**) (1843-). An Hungarian poet, born of a Jewish family in Mező-Csát. After many wanderings he reached Temesvár, where he became notary among his coreligionists. His first poetic attempt (1868) met with little success, but with a collection of lyrics (1878) his popularity began, and it was increased, another decade later, by his ballads, whose subjects were borrowed from Jewish legend or Jewish-Magyar life. He also published a volume of religious

poems (1888). One of his best-known poems is that translated by Neugebauer under the title *Lied von der Nähmaschine*. During 1890-1912 Kiss was editor of the literary periodical, *A hét* (The Week). In 1913, on the occasion of his seventieth birthday, he was received as honorary member of the Hungarian Academy of Sciences, being already a member of the Kisfaludy Society.

KISSAR, kis'ar. See CITHARA.

KIS'SIMMEE'. A city and the county seat of Osceola Co., Fla., 75 miles by rail northwest of Tampa, on Tohopekaliga Lake, at the source of the Kissimmee River, and on the Atlantic Coast Line (Map: Florida, E 3). It is known as a resort popular for its good hunting and fishing, has important fruit and gardening interests, and is the headquarters of the cattle-raising industry of Florida. The water works and electric-light plant are owned by the city. Pop., 1900, 1132; 1910, 2157.

KISSING BUG. See CONE-NOSE; INSECTS, *Poisonous Insects*.

KISSINGEN, kis'ing-en. A famous watering place of Bavaria, situated on the Saale, 43 miles northeast of Würzburg (Map: Germany, D 3). It has a number of establishments, including the Royal Bath House, and a Kurhaus with extensive garden. The chief springs are the Rakoczy, with a temperature of over 48°; the water, containing carbonic acid and iron, is extensively exported. The Pandur spring, with a temperature of 47° and containing a large proportion of carbonic acid, was discovered in the sixteenth century. About 1½ miles to the north are saline springs, used chiefly for bathing. Kissingen was visited in 1910 by 28,000 guests, including many Russians and English. It also manufactures vehicles and wine and extracts salt from the waters. Pop., 1900, 4757; 1910, 5831.

KIST'NA, or **KRISH'NA**. A river of south India, rising in the Western Ghats at an altitude of 4500 feet, about 40 miles from the west coast (Map. India, C 6). Its head spring issues from the temple of Mahadeo in the hill resort of Mahabaleshwar, Bombay; as one of the holy places of India, it is annually visited by large numbers of pilgrims. The Kistna crosses the peninsula in a southeasterly direction, breaks through a gorge of the Eastern Ghats at Bez-wada, and, after a course of 800 miles, flows by two principal and several minor mouths into the Bay of Bengal south of Masulipatam. Its chief tributaries are the Sina, the Bhima, and the Musi from the left, and the Tungabhadra from the right. Owing to its rapid stream and rocky channel, it is not navigable except in its lowest reach, which has been artificially deepened. Its waters are largely used for irrigation purposes, furnishing water for 700,000 acres, and a canal, 90 miles long, with ramifying channels, connects it with the Godavari River.

KISTS. One of the tribes of the Tchetchen group of peoples of the Caucasus, on the upper Terek. After them Brinton, in his *Races and Peoples* (1890), denominates one of the Caucasian stocks the Kistic. Kisti is said to be only the Georgian name for the people known to the Russians as Tchetchens. See TCHETCHENS.

KISTVAEN, kist'vin, or **CIST**. See MOR-TUARY CUSTOMS.

KISUTCH, kē'sūch. The native name in Alaska and Kamchatka of the silver salmon (*Oncorhynchus kisutch*). See SALMON.

KIT (probably from AS. *cytere*, from Lat.

cithara, Gk. κίθάρα, *kithara*, guitar). A small, narrow-bodied violin, about 16 inches long, capable of being carried in the coat pocket and used chiefly by teachers of dancing. It is now obsolete.

KIT (MDutch *kitte*, Dutch *kit*, beaker). A military term, signifying articles of clothing, arms, and equipments, ammunition, rations, and intrenching tools carried on the person or mount of the soldier.

In the United States army the service kit is composed of the field kit and the surplus kit. The field kit, besides the clothing worn on the person, is composed of the following articles: (1) a blanket, comb, poncho (rubber), a cake of soap, a pair of stockings, a toothbrush, and towel; (2) the personal arms and ammunition pertaining to the arm of the service, also a first-aid packet, a canteen, haversack, mess outfit, half of a shelter tent, and intrenching tool; (3) two days' rations. The surplus kit, not carried on the person but in the company wagon or other transportation, consists of a pair of drawers, a pair of shoes, two pairs of stockings, an undershirt. The overcoat is worn or carried in the wagon. The total weight, including arms and ammunition, carried by the United States infantry soldier, is 46 pounds. With two extra bandoleers of cartridges the weight is about 54 pounds.

The kit carried by European troops varies in weight from about 50 pounds in the English army to 62 pounds carried by the German soldier. In heavy marching order British infantrymen carry coat and cap, mess tin (comprising plate, frying pan, and kettle); haversack, or bread and rations; valise or knapsack, containing spare uniform; shirts, socks, boots, brushes, etc.; and a water bottle. With rifle, belt, pouches, ammunition, and bayonet, the total weight is about 50 pounds.

The German is provided with greatcoat, blanket, ground sheet, a quarter of a tent and pole, a mess tin, and an axe. His knapsack contains a spare pair of boots, three pairs of socks—or, if he is a Bavarian, foot cloths—spare uniform, brushes, etc.; when the rifle and bayonet, ammunition, etc., are added, 62 pounds is its lowest estimate. French soldiers are similarly burdened, except that, in place of waterproof sheet or haversack, the company cooking pots are distributed, which brings the weight carried by each man fully up to that of his German neighbors. The Russian carries about 60 pounds of kit, having neither blanket nor waterproof sheet. See KNAPSACK.

KITAMAT, kē'tā-māt'. See WAKASHAN STOCK.

KITAO, kē'tā'ō, **DIBO** (or **JIRO**; originally **ROKUJIRO MATSUMARA**) (1853-1907). A Japanese meteorologist, born in Matsuye, Izumo, the son of a physician. In 1870 he went to Germany, where he studied at Berlin and Göttingen, and married a German wife. In 1884 he returned to Japan and became a lecturer (and immediately a professor of physics) in the Imperial University at Tokyo. He took the same chair in the Agricultural College in 1886 and in 1888 became professor of meteorology in the Naval Staff College. His meteorological work was definitely mathematical in its bases. Kitao invented a leucoscope and wrote *Zur Farbenlehre* (1879) and the very important *Beiträge zur Theorie der Erdatmosphäre und der Wirbelstürme* (3 vols., 1887-95).

KIT-CAT CLUB. A famous London club, founded (it is said, in 1703) for the encouragement of art and literature. Its members—originally 39, but afterward 48 in number—were all Whigs. The publisher Jacob Tonson was made secretary. The club derived its name from having met for some time at the tavern of Christopher Cat, near Temple Bar. It was dissolved about 1720.

KITCHEN. A place specially arranged and equipped for cooking food. We know little of the arrangements for cooking in pre-Roman antiquity; the kitchens extant in Pompeii show very primitive arrangements, much like those still commonly used in Oriental countries. The cooking was mostly done over charcoal fires in small recesses or holes provided in a bench or range of masonry. The larger dishes and roasts were prepared most probably over an open hearth fire, and hot water was supplied by large open caldrons. During the Middle Ages the great monasteries and castles were often provided with isolated buildings to serve as kitchens; the octagonal vaulted kitchens at Durham and Glastonbury are famous. In the Seraglio Park at Constantinople the kitchens that served the former palace of the Sultans are visible with their masonry hoods and chimneys. Modern kitchens vary greatly in size and elaborateness of equipment, from the tiny kitchenette of a small flat to the vast kitchens of a metropolitan hotel; but the fundamentals are the same. There is, first, the range or stove, for fuel of wood, coal, or gas, usually provided with water back and adjacent boiler for hot water, and its ovens for baking; the sink for washing pans and dishes, the dresser or kitchen cabinet for utensils and immediate supplies; the table or tables for the preparation of the dishes. Adjacent should be pantries, store closets, and in large kitchens a scullery. Steam cookers, steam tables, broiler stoves, toasters, and various mechanical and electrical appliances are found in kitchens of hotels and large institutions. Electricity, however, has not yet found its way into general kitchen use. The kitchen should be light, airy, dry, and planned with especial regard to convenience. The kitchen of a ship is called the galley.

KITCHEN CABINET. In American political history, the name applied to a small group of men who, during the administration of President Jackson, without holding any important offices, were generally supposed to influence the action of the President more than did the members of the cabinet themselves. Of these unofficial advisers the five most prominent were Major William B. Lewis, Second Auditor of the Treasury; Isaac Hill, editor of the *New Hampshire Patriot* and elected Senator from New Hampshire in 1783; Amos Kendall, Fourth Auditor of the Treasury; Duff Green, editor of the *United States Telegraph*, who, however, became alienated from Jackson in 1830, during the latter's quarrel with Calhoun; and Francis P. Blair, Sr., editor of the *Globe*, which in 1831 superseded the *United States Telegraph* as the organ of the administration. Consult James Parton, *The Life of Andrew Jackson*, vol. iii (New York, 1860).

KITCHENER (kitch'en-er) **OF KHARTUM**, HORATIO HERBERT, first EARL (1850-1918). A famous British soldier and administrator, the eldest son of Lieut. Col. Henry Horatio Kitchener, of Leicestershire, and Anne

Frances, daughter of the Rev. Dr. Chevallier, of Aspell Hall, Suffolk. He was born June 24, 1850, at Crotter House, Ballylongford, County Kerry, Ireland. After education at the Royal Military Academy, Woolwich, he entered the army as second lieutenant of royal engineers in 1871. Earlier in the same year, while on a visit to Dinan and without the permission of the British army officials, he had enlisted in the Sixth Battalion of the French Mobile Guard (attached to the Second Army of the Loire), under General Chanzy, and had participated in the disastrous retreat after the defeat at Le Mans. At 21 and at 64 he fought on the side of France against Germany—at 21 as a private, at 64 as British Secretary of State for War, with 2,000,000 men at his disposal.

From 1874 to 1882 he was engaged in survey work and civil organization in Palestine and Cyprus, with a brief interval of residence at Erzerum as Vice Consul of Anatolia from 1879 to 1880. In 1882 Sir Evelyn Wood appointed Kitchener, as a volunteer, to one of the two majorships of Egyptian cavalry, in 1884, as quartermaster-general and deputy assistant adjutant, he was actively engaged in the vain attempt to keep open communication for the Nile expedition to relieve Gen. Charles George Gordon (qv) at Khartum; and in 1885 he was commissioner in the delimitation of Zanzibar as a British protectorate. The following year he was brevetted lieutenant colonel and received various decorations. Returning to Egypt, he became Pasha in the native army and until 1888 was Governor of Suakin. Throughout his service in north Africa Kitchener's intimate knowledge of Arabic was one of his greatest assets. In April, 1888, he attained the rank of colonel in the British army and in December of that year, while leading the troops at the battle of Handub, was seriously wounded. He received special mention in the dispatches and was created C.B. for his part in the action at Toski under General Grenfell (1889); after the conclusion of the eastern Sudan campaign he was engaged for four years as adjutant general and second in command of the Egyptian army, and also as inspector general of police; and in 1892 he was made sirdar (commander) of the Egyptian forces, with the British rank of brigadier general. During several years he was steadily engaged in completing preparations for the recovery of the lost provinces of Upper Egypt, which had been under Mahdist rule since 1883. The campaign commenced in 1896 with the capture of Dongola, which brought Kitchener the rank of major general and the K.C.B. With the overthrow of the Khalifa, the Mahdi's successor, at the battle of Omdurman, and the capture of Khartum on Sept. 2, 1898, he completed the defeat of the Dervishes. (See *SUDAN, History*.) On his return to England he received a peerage, with the title of Baron Kitchener of Khartum and of Aspell (Suffolk), and a grant of £30,000. During this home visit he raised £100,000 to found at Khartum a college in memory of General Gordon.

In 1900, as chief of staff to Lord Roberts, newly appointed commander in chief in South Africa, Kitchener was responsible in large measure for the success of British arms against the hitherto victorious Boer generals. While maintaining the lines of communication with Cape Colony, he was in frequent contact with Boer contingents and on one occasion narrowly es-

caped capture at the hands of General De Wet, whom he defeated towards the close of the year. In December, 1900, Field Marshal Roberts returned to England, and Kitchener assumed chief command. His measures resulted in the acceptance of peace conditions by the Boers on May 31, 1902. (See SOUTH AFRICAN WAR.) For his services Kitchener was created Viscount, with a grant of £50,000, was admitted to the Order of Merit, and received ovations on his return to England. As commander in chief of the army in India, (appointed 1902), he did meritorious work in strengthening the defenses of the northern frontier and in effecting a reorganization of the army, thereby greatly increasing its efficiency. During 1905, in pursuance of his scheme to obtain a larger share of autonomy for the head of the army, he came into conflict with the Viceroy, Lord Curzon (q.v.), whose resignation in the same year was a direct result of his disagreement with Kitchener.

In August, 1909, after he had resigned his Indian post, it was announced that Lord Kitchener had been appointed to succeed the Duke of Connaught as commander in chief of the Mediterranean forces. In political circles this was taken to mean that a soldier's influence was not needed near the War Office. About this time he was also created field marshal. Before the end of 1909 he visited China and Japan (where he received the Order of the Rising Sun) and then spent some time (1910) in Australia and New Zealand, inspecting colonial forces and promoting plans for improved Imperial defense. When passing through the United States on his return, he was invited to inspect the barracks at West Point; these he pronounced superior to anything he had seen in Europe. In July, 1911, he was appointed British Consul General and agent in Egypt, . . . Sir Eldon Gorst, whose tenure of . . . marked with increased freedom for native aspirations in Egypt, was none the less a failure from the British point of view. The command of British troops in the Mediterranean was also intrusted to Lord Kitchener at Cairo. Called upon to crush the growing disaffection of the Egyptian natives, he placed severe restrictions on the native press and introduced important economic reforms. In a short time he had won the good will of the Khedive and the masses, yet secret societies continued to flourish, and in 1912 several arrests were made in connection with a plot aimed at the lives of the Khedive and Kitchener.

While Kitchener was in England in the summer of 1914, after being made Earl by King George, the European situation became acute; but he had already set out for Cairo before the British cabinet saw the need of his services at home. When England entered the war in August, one of the first names in the new cabinet was that of Earl Kitchener as Secretary of State for War. The acclaim with which the appointment was greeted showed how truly the people had gauged the value of the man who had seen them safely through the South African troubles. In September he was made lord rector of Edinburgh University, President Poincaré of France being honored in the same way by the Glasgow students. Kitchener predicted that the war would be a long one. "My term of office is for the duration of the war, or for three years if the war should last longer than that," he said in the House of Lords. Straightway he began building up an army, with the

same nerve and machine-like mind that planned the advance on Khartum, pacified the Transvaal, and organized the Indian army. So well did he succeed that in November he could inform the public that he had 1,250,000 men in training in England, and that he looked to the people to supply another 1,000,000. Under him troops were brought to Europe from Canada, India, and Australia and successfully provided for. Kitchener was retained as Secretary for War in Asquith's coalition cabinet, formed May, 1915. See WAR IN EUROPE.

Consult: G. W. Stevens, *With Kitchener to Khartum* (London and New York, 1898; new ed., New York, 1914); H. G. Groser, *Lord Kitchener: The Story of his Life* (London, 1901, new ed., New York, 1914); F. W. Hackwood, *Life of Lord Kitchener* (London, 1913); Sir Sidney Lee, *Kitchener of Khartoum* (London, 1914); H. F. B. Wheeler, *Life of Lord Kitchener* (ib., 1914); Sketch in the *London Times Illustrated History of the War*, part viii (ib., 1914).

KITCH'EN MID'DEN (*kitchen* + *midden*, refuse heap, after the equivalent Dan. *kjokkenmødding*). Ancient refuse of a camp or village in which are found buried relics of human industry and art. If they are on the seashore, they are called shell heaps, because mollusks enter largely into their mass. All over the world, wherever the camps of primitive peoples were located with any permanency, the huts or tents were set up on the site of the refuse pile of former villages and were abandoned and rebuilt repeatedly until the whole mass was often as much as 100 feet in depth. The Danish *kjokkenmøddings* were at first thought to be natural formations on the beach. When, however, their artificial composition was made evident, only a few efforts with pick and shovel were needed to reveal piercers, knives, scrapers, axes, hammers, slingstones, pottery, horns, bone needles, and flakes. The bones of mammals were mixed with the shells—stag, roedeer, wild boar, urus, dog, wolf, fox, marten, otter, seal, water rat, beaver, lynx, wildcat, hedgehog, bear, and even the mouse. There too are found mingled bones of birds and fish and more than a dozen kinds of shells. Here and there a hearth made up of flat stones showed the marks of fire and proved the existence of domestic life. In some places this débris was as much as 10 feet thick and stretched along the beach 1000 feet. The width varied with the shore line, being at times 200 feet, but growing narrower in both directions. The excavation of the Danish kitchen middens gave the impulse for the exploration of similar formations in many parts of the world. In the shell heaps of Omori, Japan, evidence has been found of the existence of a far more primitive people than now dwell in those islands. In the shell heaps of the Aleutian Islands layers of different species were found which lead to the conviction that the present Aleuts were preceded by a much ruder race. Shell heaps on the coast of British Columbia, Oregon, and southern California, of vast size, have been explored and have shown the character of the true savage life here before the centuries of Spanish acculturation. The Atlantic coast of America, from Nova Scotia to Tierra del Fuego, and even the inland waters, wherever fresh-water mollusks abounded, are full of similar evidence. In the Straits of Magellan the almost naked savages are still in the kitchen-midden epoch, just as seen by early ex-

plorers. On the Atlantic coast of Brazil, wherever there is a favorable spot, is the *sambaqui*, or ancient shell heap, of such enormous proportions that the accumulation of some of them must have required thousands of years. Huge forests have grown over them, and river drifts have hidden others from view. Farther north, on the Florida Keys, hundreds of specimens have been recovered from the water which identify the ancient key dwellers with aborigines of Yucatan and Central America. Farther north the waters of Florida on both sides and along the St. John's are a vast repository of kitchen middens or shell heaps, which have been accumulating for ages. The Chesapeake Bay and its tributaries are now vast reservoirs of marine food, but in aboriginal times they were still richer. Some of the heaps are many acres in extent, from 10 to 20 feet deep in places, and rich in relics of the makers. These heaps do not disappear from the coast until the St. Lawrence is reached.

A comparison of relics in the shell heaps with those of inland tribes and with other peoples of the same grade of culture throughout the world leads to the conclusion that in none of them is it a matter of a unique race or culture. As the shell heaps were for temporary abode, there was little industry characteristic of residence there.

Bibliography. Rau, "Artificial Shell Deposits of New Jersey," in Smithsonian Institution, *Annual Report* (Washington, 1864); Brinton, "Artificial Shell-Deposits of the United States," in Smithsonian Institution, *Annual Report* (ib., 1866); John Lubbock, *Prehistoric Times* (New York, 1872); Paul Schumacher, "Kjökkenmøddings on the Northern Coast of America," in Smithsonian Institution, *Annual Report* (Washington, 1873), id., *Ancient Graves and Shell-Heaps in California* (ib., 1874); Wyman, "Fresh-water Shell-Mounds of Florida," in *Memoirs of the Peabody Academy of Science*, vol. i (Cambridge, 1875); W. H. Dall, "Tribes of the Extreme Northwest," in *Contributions to North American Ethnology*, vol. i (Washington, 1877); Paul Schumacher, "Researches in the Kjökkenmøddings of the Coast of Oregon," in United States Geological Survey, *Bulletin*, vol. iii (ib., 1877); Morse, *Shell-Mounds of Omori* (Tokyo, 1879); C. B. Moore, numerous papers on Florida Mounds, in which the shell heaps are described and profusely illustrated (Philadelphia, 1894-1903); Holmes, "Earthenware of Florida," in Moore, *Shell-Mounds, etc.* (ib., 1894); Cushing, *Ancient Key-Dwellers' Remains* (ib., 1897); W. W. Felt, "Ancient Shell Heaps near New York City," in American Museum of Natural History, *Anthropological Papers*, vol. iii (New York, 1909). For Brazilian *sambaquis*, Reclus, *The Earth and its Inhabitants* (ib., 1890). See NEOLITHIC PERIOD; ARCHÆOLOGY, AMERICAN.

KITE (AS. *cyta*, kite). A diurnal bird of prey of the subfamily *Milvinae*, which contains about 30 species, widely distributed over the world, but most frequent in the tropics. The kites have much weaker bills and talons than the falcons and hawks, but the wings are much longer, and the tail is rather long and usually forked. They are remarkable for their gracefulness of flight and power of sailing and wheeling about or gliding in the air. The common European kite (*Milvus milvus*, or *ictinus*), or glebe, is found in almost all parts of Europe, Asia, and the north of Africa. It is fully 2 feet in length,

the plumage mostly brown mixed with gray. It feeds on reptiles, mice, moles, and other small quadrupeds, and the young of gallinaceous birds, searching for its prey on the ground, but often from high in the air. It sometimes catches fish. In former times, when more plentiful, it was the scourge of poultry yards, pouncing on young chickens, and it was highly regarded by mediæval falconers, though more recently it has not been used at all in that sport. It was also the scavenger of London and other English towns, devouring the offal, as it still does in some of the towns of eastern Europe, but in England it is now nearly extinct. In India the goond, chil, or pariah kite (*Milvus govinda*) is one of the recognized and important scavenging birds of the country and abounds everywhere in the towns, going about tame and unharmed and often making a nuisance of itself by its impudent familiarity.

In the United States four birds are called kites, but they are all Southern, only one of them reaching the Northern States. The Everglades kite (*Rostrhamus sociabilis*) is found in Florida and far southward, the Mississippi kite (*Ictinia mississippiensis*) occurs as far north as South Carolina and southern Illinois; the white-tailed kite (*Elanus leucurus*) has about the same range, but extends westward to California; lastly, the swallow-tailed kite (*Elanoides forficatus*) is found in summer as far north as Minnesota and Dakota. This last species is the largest and finest of the group, measuring 4 feet or more across the wings, head, neck, and under parts pure white; rest of upper parts, wings, and tail, glossy, lustrous black; tail, 14 inches or more in length, forked for 7 inches or so. Consult Fisher, *Hawks and Owls of the United States* (Washington, 1893). See PLATE OF EAGLES AND HAWKS.

KITE (so called apparently because soaring in the air like a bird). A contrivance consisting of a light framework, covered with paper or cloth and held by a string in such a way that the wind acting upon it, as upon a sail, raises it to a greater or less height above the ground. The origin of the kite is doubtful, but it has been used for many centuries as a toy, particularly by the Japanese and Chinese, and has recently come into quite extended use in meteorological observations and for other useful purposes. Kites are made in various forms, the favorite form being perhaps an isosceles triangle, the base of which becomes the top of the kite and is surmounted by a curved rib. This framework is covered with tightly stretched paper or cloth and has at its pointed end a tail composed of twisted scraps of paper, tied to a long string. The string for holding the kite during flight is attached near its top. In China and Japan the form of kite is more diversified than elsewhere, birds, bats, dragons, and other creatures being imitated, and the framework being covered with silk or paper having various painted ornamental designs. Modern kites for scientific purposes are generally tailless and constructed in one of two forms, known as the Malay and the Hargrave.

One of the first attempts to use a kite for scientific purposes was made in 1749 by Dr. Alexander Wilson, an Edinburgh astronomer, who attached thermometers, probably of his own make, to kites, in order to determine the temperature in the clouds. After this came the familiar experiment of Benjamin Franklin, who

demonstrated the identity of electricity and lightning. He constructed a kite whose framework consisted of a cross made of two light strips of cedar; over this was stretched a silk handkerchief, tied to the four extremities; a sharp-pointed wire extended a foot from the top of the upright stick of the cross; the kite string terminated in a silk ribbon held by the observer, and a key was suspended at the junction of the twine and silk. The kite was raised by Franklin during a thunderstorm in June, 1752, and almost immediately he had the satisfaction of experiencing a spark on applying his knuckles to the key, and when the string became wet by a passing shower, the electricity became abundant. A Leyden jar was charged at the key, and by the spark thus obtained spirits were ignited and other experiments performed.

Since the remarkable experiment of Franklin the use of the kite for scientific purposes has been greatly extended. Self-recording anemometers were sent up to a height of 2500 feet by E. D. Archibald in England in 1882-86. (Consult the volumes of *Nature* for those years.)

of the midrib. It is necessary for the kite to lift its own weight, eight pounds; that of the meteorograph, two pounds; and that of the kite line, or fine steel wire, which may amount to 20 or 30 pounds in high ascensions. But the principal obstacle to high flights is the pressure of the wind on the wire. Some authorities prefer to fly several kites at tandem, but the Weather Bureau experience is in favor of one kite for elevations up to 7000 feet. Among the highest flights hitherto recorded at Blue Hill is a vertical height of about 14,000 feet, when seven kites were flown tandem and five miles of wire were used. In the United States, meteorological observations by means of kites and balloons have been carried on continuously by the Weather Bureau at Mount Weather, Va., and elsewhere since 1905. The greatest altitude to which instruments were raised by kites at Mount Weather was 23,835 feet, when 10 kites and 8.5 miles of wire were used on May 5, 1910. A number of other flights at Mount Weather were almost as high as the above. For several years the force stationed there, under W. R.

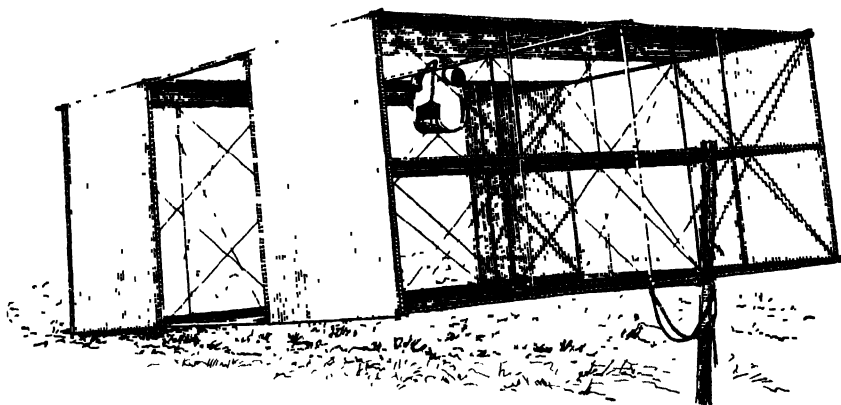


FIG 1. UNITED STATES WEATHER BUREAU BOX KITE (AFTER MARVIN)

In 1885 and 1887 Alexander McAdie used the kite to explore the electrical conditions of the air up to 1000 feet above Blue Hill Observatory. In 1890 William A. Eddy began adapting his Malay kite to meteorological work, and thermometers were thus sent up by him at Bayonne, N. J., in 1891. In 1894 a Richard thermograph was sent up to an altitude of 1000 feet above ground by Eddy and S. P. Ferguson, at the Blue Hill Observatory of A. L. Rotch, and from that date onward Rotch made kite work a prominent feature in the meteorological investigations carried on at this observatory. The subject was taken up in 1895 by Prof. W. L. Moore, as Chief of the United States Weather Bureau, where Prof. C. F. Marvin developed the mechanics of the kite and so improved the construction of the Hargrave or cellular kite, of the meteorograph that goes up with it, and of the reeling apparatus on the ground, that his complete outfit for daily work at any station was generally recognized as the best that had as yet been made. In 1898 17 Weather Bureau stations were equipped for daily kite ascensions. The Hargrave kite, as made by Professor Marvin, consists of a light framework of wood, so covered with cloth as to form two rectangular cells in front and one larger rectangular cell in the rear: the meteorograph hangs from the centre

Blair, carried out repeatedly continuous kite flights of 24 to 36 hours' duration

In Europe the late L. Teisserenc de Bort, at Trappes, near Paris, and R. Assmann, at Berlin, were the pioneers in the systematic use of the kite as a means of obtaining observations in the free air at moderate elevations. For all greater heights the balloon, especially the so-called sounding balloon, must be used. The kite can be used in windy weather when the balloon cannot; but the special advantage of the kite lies in the fact that the self-recording apparatus is thoroughly ventilated by the wind that supports the kite, and must therefore give the temperature and moisture of the free air with the least possible error introduced by solar heat or instrumental radiation.

The use of kites to carry lines across streams or deep chasms and to convey life lines to stranded ships is a familiar practice in engineering and life-saving work. Kites have also recently been used to hold suspended in midair banners for advertising and other purposes and for taking photographs. For all of these purposes, as has been stated, either Hargrave or Malay tailless kites are employed. The Malay kite is shown in the illustration on the following page, taken from a paper by J. B. Millet published in the *Aéronautical Annual* for 1896;

this illustration also gives Mr. Millet's ideas as to the proper proportions for kites of this type.

The military use of kites has been especially developed by the Aéronautic Division of the German army, which used the kite balloon invented by Parseval and perfected by Captain

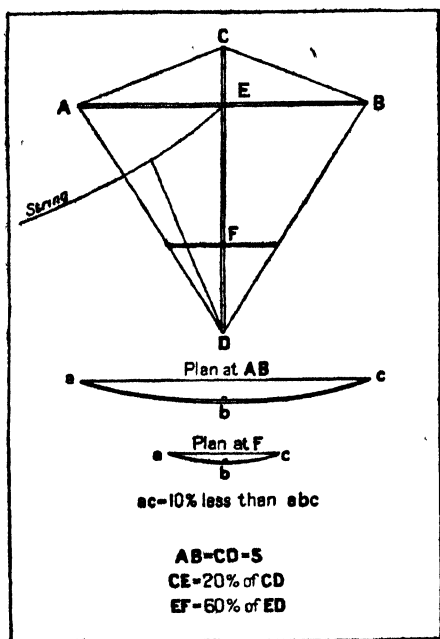


FIG. 2. MALAY KITE.

von Siegsfeld. This consists essentially of a cylindrical gas bag filled with hydrogen and bridled as a kite. When the wind blows, its pressure tends to keep the kite up by the reaction of the cord attached to the balloon and does not bear it down to the ground, as in the case of a captive spherical balloon. When there is no wind, the buoyancy of the hydrogen suffices to keep the balloon up. For military purposes the kite balloon is not expected to rise more than a few hundred yards above the ground, and when in that position a signal officer can be raised sufficiently high to scrutinize the surrounding country.

Bibliography. *Proceedings of the International Conference on Aerial Navigation* (Chicago, 1893); C. F. Marvin, *Mechanics of the Kite; Instructions for Aerial Observations; Investigation of the Sluggishness of the Meteorograph*, and other bulletins of the Weather Bureau (Washington, 1898-); L. Teisserenc de Bort, "Études sur la température et ses variations," in the *Annals of the Central Meteorological Bureau* (Paris, 1897); "Sur l'organisation des sondages aériennes," in the *Memoirs of the International Congress for Meteorology* (ib., 1900); A. L. Rotch, *Use of Kites to Obtain Meteorological Observations* (Boston, 1900); Assmann und Berson, *Ergebnisse der Arbeiten am aeronautischen Observatorium in den Jahren 1900 und 1901* (Berlin, 1902); *Arbeiten des Königl. preussischen aeronautischen Observatoriums* (Lindenberg, 1904-13).

KITE, MAN-RAISING. See MILITARY KITE.

KITE, MILITARY. See MILITARY KITE.

KIT FOX. See FOX, and Plate of FOXES AND JACKALS.

KIT-KAT CLUB. See KIT-CAT CLUB.

KI-TSE, k'è'tse', or CHI-TSE, or KI-JA, k'è'jè', VISCOUNT KI. A Chinese statesman, ancestor of Confucius, and reputed founder of the civilization of Korea. He was one of the feudal barons of the Shang dynasty, and one of the nobles of the Empire during the reign of the abandoned tyrant Chow-sin, who came to the throne in 1154 B.C. and showed himself one of the most licentious and cruel monarchs who ever sat on the throne of China. Viscount Ki vainly endeavored to turn him from his evil ways and for his pains was thrown into prison, from which he was released when Wu-wang defeated the tyrant and ended the Shang dynasty (1123 B.C.). Despite his sufferings, the loyalty of the Viscount was so great that he could not acknowledge the sovereignty of the conqueror, whom he regarded as a usurper. He asked permission to emigrate, and with 5000 followers he retired to Korea, where (1122 B.C.) he set up a kingdom which had its capital at Ping-yang (q.v.), on the Ta-dong River. Ki-ja was a successful colonizer, and his company contained artisans of every description, together with the evidences of culture and civilization of China, which up to that time were entirely lacking in Korea. He found the natives in a barbarous state, but he adopted their language and began a peaceful reign. His government was good, and he introduced a penal code of eight laws and a financial system. He is said to have taught the Koreans propriety, integrity, agriculture, the rearing of silkworms, and the spinning and weaving of silk. One of the most important sections of the great Chinese classic, *The Shu-king* (or Book of History) entitled *The Great Plan*, is attributed to him. Outside of the present new city of Ping-yang is the site of Ki-ja's capital, with a well dug by him, a monument describing his virtues, and his reputed tomb. The dynasty he founded, consisting of 42 kings, is said to have endured 1000 years; but, as Korean tradition is dependent on Chinese history, critical scholarship does not see in the modern Koreans the descendants of Ki and his settlers, nor in their claims the exact truth. Consult Hulbert, *The Passing of Korea* (New York, 1906). For *The Great Plan* in *The Shu-king*, consult Legge, *Chinese Classics*, vol. iii (Hongkong, 1865). See KOREA.

KIT'SON, HENRY HUDSON (1865-). An American sculptor. He was born at Huddersfield, England, and studied under his brother Samuel in Boston and at the Ecole des Beaux-Arts, Paris, under Bonnaisseux. One of his earliest works, "Music of the Sea" (Boston Museum), is unusually charming and spontaneous. Among his important public monuments are that of Major Doyle in Providence, R. I.; the Iowa State Monument and the statue of General Lee, at Vicksburg, Miss.; "The Minute Man," at Lexington, Mass.; the Hayes Memorial Fountain, at Providence; the W. H. Hunt Memorial, in Boston; and the statue of Roger Conant at Salem, Mass. He received various medals, and a decoration from the King of Rumania.

KITSON, THEO ALICE RUGGLES (1871-). An American sculptor, the wife and most talented pupil of Henry Hudson Kitson. She was born at Brookline, Mass., and studied first under Mr. Kitson in Boston and then under Dagnan-

Bouveret in Paris. She became one of the few women members of the National Sculpture Society, and, at the time she received honors at the Paris salon, was the only American woman to have gained such distinction. The monumental statues which are her chief productions are spirited, robust, and simple both in conception and execution. Among the best are the Massachusetts State Monument at Vicksburg; "The Minute Man of '76," Framingham, Mass.; the "Mother Bickerdyke" group, for Illinois; the monument to the students of the University of Minnesota who served in the Spanish-American War; and various soldiers' monuments. She collaborated with her husband in the Patrick Collins Monument in Boston and in the Stephen D Lee Monument in Mississippi.

KITTANNING. A borough and the county seat of Armstrong Co., Pa., 44 miles by rail northeast of Pittsburgh, on the Allegheny River, and on the Pennsylvania and the Pittsburgh, Shawmut, and Northern railroads (Map: Pennsylvania, C 5). It has large iron and steel works, foundries, coal mines, glassworks, flour and lumber mills, china, pottery, brick, lime, and clay works, mirror and typewriter factories, breweries, etc. Besides coal, iron ore and other mineral deposits are found in the vicinity, and the borough is supplied with natural gas. Pop., 1900, 3902; 1910, 4311. The boroughs of Kittanning and Wickbora were consolidated, giving the former a population of about 10,000 in 1914.

KITTATINNY. A mountain ridge, averaging 1200 to 1800 feet in height, which begins in Ulster Co., N. Y., and extends southwestward through northwest New Jersey. It forms the east ridge of the Appalachian system in this section, and after passing the Delaware Water-gap it is continued through eastern Pennsylvania in the uplift known as Blue Mountain. See APPALACHIANS.

KIT'TEL, RUDOLF (1853-). A German Old Testament scholar, born in Eningen, Württemberg. Educated at Tübingen, he was an instructor there (1879), a professor in a secondary school in Stuttgart (1881-88) and professor in the University of Breslau (of which in 1896 he was rector) from 1888 to 1898, and thereafter professor of Old Testament exegesis at the University of Leipzig. Among his many important contributions to the study of the Old Testament are: *Geschichte der Hebraer* (1888-92; Eng. trans., *A History of the Hebrews*, 1895), *Judges and Samuel* (1892), in Kautzsch's German translation of the Old Testament; *The Books of Chronicles* (1895); Hebrew text with notes, in Haupt's "Sacred Books of the Old Testament", *Zur Theologie des alten Testaments* (1899); *Prophetie und Weissagung* (1899); a German commentary on the Book of Kings (1900) and one on Chronicles (1902); *Die orientalische Ausgrabungen und die ältere biblische Geschichte* (5th ed., 1906, Eng. trans., *The Babylonian Excavations and Early Biblical History*, 1903, 3d ed., 1908); *Der Babel-Bibel-Streit und die Offenbarungsfrage* (1903); *Biblia Hebraica* (1905-06; abbreviated ed., 1913), a new critical text which he had planned for several years and in which he was assisted by Beer, Buhl, and Dalman; *Studien zu hebraischer Archäologie und Religionsgeschichte* (1908); *Geschichte des Volkes Israel* (2d ed., 1909-12); *The Scientific Research of the Old Testament Text* (1912); *Kommentar zum Psalter* (1914).

KIT'TELSEN, THEODOR (1857-1914). A Norwegian artist, born at Kragerø. He studied at Munich, painting "Streik" (1879), which attracted much attention, and later in Paris. He excels in pen-and-ink drawings, as is shown in his fantastic and grotesquely humorous illustrations to Asbjørnsen's and Moe's fairy tales, and the bizarre stories of his friend Skeibrok the sculptor, and in his caricatures *Fra livet i de smaa forholde* (2 series, 1889-90). The mystic and awe-inspiring in Norwegian nature and traditions he portrayed in *Fra Lofoten* (2 series, 1890-91) and in the paintings "Echo," "The Water Spirit," "The Witch," "Witchcraft" (1892), and "In the Deer Park" (1896), in Berlin. He also furnished pictures for *Simplissimus* and other periodicals. In the Christiana Gallery he is represented with these paintings: "The Twelve Wild Ducks" (1897), "Soria Moria Castle" (12 pictures), "From Jomfruland" (15 pictures), together with numerous drawings.

KITTERY. A town in York Co., Me., on the Atlantic Ocean and the Piscataqua River, opposite Portsmouth, N. H., on the Boston and Maine Railroad (Map: Maine, B 5). It has the Rice Public Library, the Trape Academy, and several hotels. On an island in the river is the naval station known officially as the Portsmouth Navy Yard, the scene of the Russo-Japanese Treaty of 1905 (q.v.). Settled in 1624, Kittery was incorporated under its present name in 1647. It was the birthplace and home of Sir William Pepperell (q.v.) and formerly carried on an extensive shipping trade. Pop., 1900, 2872; 1910, 3533.

KITTIM (Authorized Version sometimes CHITTIM). The third son of Javan and the brother of Elisha, Tarshish, and Dodanim (Rodanim, or possibly Dardanim), according to Gen. x. 4. It is evidently the name of a people, as the plural form and the context show. The clearest indication of where this people lived would seem to be the description of Alexander as coming from "the land of the Kittim" (1 Macc. i. 1) and of Perseus as "king of the Kittim" (viii. 5), consequently Macedonia. But, on the one hand, it apparently applies to Italy in Dan. xi. 30, suggesting that it was sometimes used loosely for the West in general; on the other hand, Josephus (*Ant.*, i, 6, 1) maintains that it originally referred to Cyprus, where Kiton, the present Larnaka, was an indication of the old name of the island. The identifications of Josephus are often dictated by a more or less striking similarity of sound, and there is no evidence that unmistakably points to a connection between Kiton on Cyprus and the Kittim. Alashia is manifestly the name of Cyprus, or a part of the island, in the Tell el-Amarna tablets (xxv-xxxiii, lxxxi, 52), and this name has been thought to be identical with Elisha (Gen. x. 4). However that may be, Kittim cannot be limited to the Greek settlement on Cyprus; the phrase "isles [or coastlands] of Kittim" in Jer. ii. 10; Ezek. xxvii. 6, indicates a wider significance, and the plural "Kittim" also seems to suggest something more than the population of a single locality. It would be easier to understand how the name could become a designation of the Macedonians, if it originally referred to a people settled on the coasts of the Aegean as well as on some of the islands in the Mediterranean. Such an expansion of meaning Josephus indeed suggests. It is not

easy to determine what people this can have been. Knobel conjectured that it was the Carians, also called Macarians. The Macedonians are more likely to have been a Hellenic people than the Carians; it has been thought that there was a shorter form (Keta) as well as a longer (Maketa) of their name; there is no reason why they should not have been known in Syria at an early time, and, if the similarity of sound between Citium and Kittim is accidental, there is no necessity for bringing the Macedonians to Cyprus. We do not know whether the Aegean invaders of Cyprus in the late Minoan age were Greeks or not. Modern critics have, as a rule, abandoned the attempts of earlier scholars to find in Gen. x. 4 the names of well-known tribes who could have been regarded as kindred, such as Aeolians, Etruscans, Macedonians, Dardanians, and seek for Greek settlements, of which some rumor may have come to the Hebrews, at Carthage and Tartessus, on Cyprus and Rhodes. Future research and discovery may enable us, on grounds not known to-day, to reach a decision as to whether this was a move in the right direction. Meanwhile the identification of Kittim with Cyprus is tentatively held by most scholars. Consult: Knobel, *Die Volkertafel der Genesis* (Giessen, 1850), W. Max Müller, *Asien und Europa* (Leipzig, 1893); and the commentaries on Genesis by Gunkel (3d ed., Leipzig, 1910), S. R. Driver (7th ed., London, 1909), John Skinner (New York, 1912), and H. E. Ryle (ib., 1914).

KITTIWAKE (so called in imitation of its cry). A medium-sized gull of the genus *Rissa*, characterized by the rudimentary or very small hind toe and the peculiar pattern of coloration of the primaries. It is confined to the Northern Hemisphere and breeds in immense numbers along the rocky coasts of the northern oceans, building its nests on ledges and inaccessible cliff. The nests are made of seaweeds, grass, moss, and the like, and the eggs, usually three, are, like those of other gulls, buffy or grayish brown marked with chocolate brown. The kittiwakes do not differ essentially from the other gulls in their food or habits. Only two species are known, of which the common kittiwake (*Rissa tridactyla*) is the most widely distributed. It occupies during the summer the entire circumpolar region in America and breeds as far south as the Magdalen Islands and northern Minnesota, while in winter it wanders south to the Caspian Sea and Mediterranean, and in the western Atlantic to the coasts of Virginia. The same species occurs in winter about the Great Lakes and on the Pacific coast as far south as Puget Sound. It is a curious fact that Pacific coast specimens have the hind toe much better developed and provided with a small claw, and they are accordingly recognized as a subspecies (*pollicaris*). The second species of kittiwake (*Rissa brevirostris*) is an inhabitant of Bering Sea, where it is a permanent resident and breeds in vast numbers on the inaccessible crags of rocky islands. It is easily distinguished from the common kittiwake by the shorter bill, longer wing, and the color of the feet, which in life are coral red but when dry are yellow; the feet of the common species are blackish. Consult H. K. Job, *Among the Waterfowl* (New York, 1902), and standard authorities. See GULL.

KITTO, JOHN (1804-54). An English biblical scholar, born at Plymouth, Dec. 4, 1804. In his thirteenth year he lost his power of hear-

ing in consequence of a fall. His father's circumstances at this time were so wretched that young Kitto was soon after sent to the workhouse. Here he learned the trade of shoemaking. In 1824 he went to Exeter to learn dentistry with Anthony Norris Groves, one of the founders of the Plymouth Brethren, and later a devoted independent missionary in the East. Mr Groves encouraged Kitto in his literary aspirations, and in 1825 he published *Essays and Letters by John Kitto*. In the same year Kitto was sent by the kindness of various friends to the missionary college at Islington, to be trained as a printer on one of the Church Missionary Society's foreign presses. In 1827 he went in that capacity to Malta, but was recalled in 1829 because he neglected his duties in his devotion to literature. In June, 1829, he accompanied Mr. Groves and family on a tour to the East, visiting in the course of his travels St. Petersburg, Astrakhan, the Kalmuck Tatars, the Caucasus, Armenia, Persia, and Bagdad. He returned to England in 1833. The rest of his life was spent in the service of the booksellers. He died at Cannstadt in Württemberg, Nov. 25, 1854. His principal works are: *The Pictorial Bible* (1838; new ed., 1855); *Pictorial History of Palestine* (1839-40); *History of Palestine* (1843); *The Lost Senses—Deafness and Blindness* (1845); *Journal of Sacred Literature* (1848-53), *Daily Bible Illustrations* (8 vols., 1849-53; new ed. by Porter, 1866-67). He also edited the *Cyclopedia of Biblical Literature* (2 vols., 1845; 3d ed., 3 vols., by W. L. Alexander, 1862-70). Consult his biography by Ryland (London, 1856) and by J. Eadie (Edinburgh, 1857).

KITTREDGE, GEORGE LYMAN (?-). An American English philologist, who graduated from Harvard University in 1882 and, after passing from instructor to assistant professor of English in his alma mater, became full professor in that institution in 1894. In 1901 he was honored with the degree of LL.D. by the University of Chicago, in 1907 with that of Litt.D. from his own university. He was a fellow of the American Academy of Arts and Sciences and a member of various learned societies. His work includes: *The Mother Tongue* (1900), with Sarah Louise Arnold; *Words and their Ways in English Speech* (1901), with James B. Greenough; *Old Farmer and his Almanach* (1905), *Essays on Chaucer*, (1914); *Chaucer and his Poetry*, six lectures delivered at Johns Hopkins (1915).

KITUNAHAN, kē'tōō-nā'han. A North American Indian stock. See KUTENAI.

KIUH FOW, kyōō' fou', KEUH FOW, KU FOW, or CHUFOW. A small prefectural city in the Department of Yenchow, Shantung, China, situated about 10 miles northeast of Yenchowfu. It is noted as the birthplace of Confucius and the residence of Duke K'ung, his lineal descendant of the seventy-sixth generation. The city is walled, has five gates, and is about 1 mile in length and ½ mile in width. Two of the gates are in the south wall; the more westerly one formerly opened only on the occasion of an Imperial visit. A beautiful avenue of cypresses and other fine old trees leads from this to the main entrance of the Great Temple, or rather series of temples, erected here in honor of Confucius. The main building is a gorgeous affair, of impressive proportions, built of the heaviest teakwood from Burma, with elaborate, massive, gorgeously colored eaves, and roofed with yellow

glazed tiles. The front veranda is supported by 10 great stone pillars, 22 feet high, 2 feet in diameter, each of one piece, and very deeply cut in relief with coiling dragons. Within the building stands a statue of the saint, with his favorite disciples ranged on either side. On a high table in front are some very ancient relics. In a separate inclosure a little distance to the north of the city is the Sage's grave, surrounded by the graves of the K'ung family. It is approached by a fine avenue of cypresses and stands in a little forest of oak, cypress, pine, etc. The mound is 25 feet high. The graves of generation after generation are scattered all around, with monuments and imposing pailous. The Taiping rebels spared Kiu Fow. Pop., about 20,000.

KIUKIANG, kyōō'kyāng' (Chin., nine rivers). A departmental city of the Province of Kiangsi, China, opened by treaty in 1861 as a place of foreign residence and trade. It is situated on the right bank of the Yang-tse, about 130 miles southeast of Hankow (q.v.), 445 above Shanghai, and 12 above the entrance to the Poyang Lake (Map. China, L 6). The circuit of the city is about 5 miles. The principal gates are those on the east and west. Outside the west gate lies the principal suburb, and to the west of this is the foreign settlement, which stretches along the Yang-tse for 500 yards, with a fine "bund" or esplanade along the river bank. At Kuling (blue ridge), 13 miles from Kiukiang, a foreign mountain resort has been established by the foreign population of Shanghai and the Yang-tse. Over 1000 foreigners congregated here in the summer months. Behind the city and the settlement lie large shallow lakes, which in some places skirt the city walls, and to the west of the settlement flows a little river called the P'un. The native city presents no feature of special interest. It was taken by the Taiping rebels and held by them for five years and was utterly destroyed before they left it. The foreign population is small. There are an Episcopal church (the British government having formerly maintained a consular chapel here) and a Roman Catholic cathedral, and there are several successful Protestant missions. The settlement is managed by a municipal council, elected by the land renters, and is well laid out, lighted, drained, and watched. The climate is pleasant, though the heat in summer is frequently as high as 100° F. The trade is not extensive, owing largely to the upstream distance from the entrance to the Po-yang Lake, the current being too strong for native cargo boats to stem. In 1912 net imports amounted to 16,557,235 taels, and exports to 18,014,415 taels, a total trade value of 34,571,650 taels. Imports are mainly cotton yarn, kerosene, and sugar; exports, porcelain, rice, tea, cotton, hemp, paper, and tobacco. There is no direct foreign trade, and communication with the Po-yang ports is maintained by means of native-owned steam launches. Kiukiang was opened mainly to accommodate the tea trade, but Hankow (q.v.) has become the tea mart of the region. Near Kiukiang is the grave of Chu-fu-tse the philosopher (1130-1200 A.D.). The population is estimated from 36,000 to 55,000.

KI'UN. See CHIUN.

KIUNGCHOW, kyōōng'chou', or CHIUNGCHOU. A department of the Chinese Province of Kwangtung, made up entirely of the island of Hainan (q.v.) (Map: China, K 8). It

contains three prefectural cities of the rank of *chow*, and 10 of *hien* (or *hsien*) rank. The departmental city is also called Kiungchow and is distant about 3 miles from the sea, where its "port," called Hoihow (lit., seaport), is situated. The city was opened to foreign residence and trade in 1876. Net foreign imports in 1912 amounted to 2,727,739 taels, net Chinese imports, 215,242 taels, a total of imports of 5,333,651 taels. Exports amounted to 2,390,670 taels. Kerosene from Borneo, Sumatra, and Burma (a little from the United States) is the chief import. The chief exports are pigs, cattle, eggs, betel nuts, poultry, grass cloth, hemp, galangal, and sesamum seeds.

Ten miles south of the city are the Kiung Mountains, where a particular kind of jade is said to be found. This gives name to the department and its chief city. The name dates from the year 654 A.D. Population of the city, 42,000, and of the department, about 2,000,000.

KIUPRILI, ku-prē'lē (variously spelled). The name of a family of grand viziers of Turkey of Albanian origin.—**MOHAMMED KIUPRILI** (1585-1661) entered the palace in a menial position, but by his ability he became in time Governor of Damascus, Tripoli, and Jerusalem. In the troubles which followed the death of Sultan Ibrahim, and while Mohammed IV was still a minor, the Sultana, Valideh, appointed him Grand Vizier, Sept. 15, 1656, but he accepted the office only after he had been given full authority. He ruled with great energy and severity, suppressing religious fanatics and rebels. He also restored order in the administration. Against Austria and Venice he waged successful war, and the islands of Lemnos and Tenedos were recovered from the latter. He left his power to his son **AHMED** (1630-76). Like his father, the latter antagonized the ultra-orthodox and in 1663 took command of the armies against Austria. He overran Hungary and Transylvania and captured several strong towns. Christian Europe, however, was alarmed, and France sent aid to Austria, and on Aug. 1, 1664, the Turks were decisively defeated at the battle of St. Gotthard by the Imperial forces under the Count of Montecuccoli (q.v.). Nevertheless Kiuprili was able to conclude an advantageous peace. In 1669 Candia was captured, and peace made with Venice. His last years were spent in war with Poland, during which he was several times defeated by Sobieski (q.v.). —**MUSTAPHA** (died 1691) was a brother of Ahmed. He had sufficient influence over Mohammed IV to induce him not to kill his brother Solyman, and hence, when the latter in 1687 overthrew Mohammed and became Sultan as Solyman III, he remembered the service and in 1689 made Mustapha Grand Vizier. He re-established order in internal affairs, but in the war against Austria he was killed in the battle of Salankamen, Aug. 19, 1691. Consult Creasy, *History of the Ottoman Turks* (London, 1877), and Brosch, *Geschichten aus dem Leben dreier Grosswesire* (Gotha, 1899). See **TURKEY**.

KIUSHU, kyōō'shōō', KYUSHU (Sinico-Japanese, nine provinces). One of the five large islands which form the main part of the Empire of Japan and the most southerly of the three which form Japan proper. It is separated from Hondo, or the main island, by the Straits of Shimonoseki, and from Shikoku, the smallest of the three, by the Straits of Bungo (Map: Japan, B 8). Area, 16,840 square miles; pop., 1898,

6,357,551; 1903, 7,260,834; 1908, 7,726,934. It takes its name from the fact that it consists of nine provinces: Chikuzen, Chikugo, Buzen, Bungo, Hizen, Higo, Hyuga, Osumi, and Satsuma. For administrative purposes it has been divided since 1874 into seven *ken*, or prefectures: Nagasaki, Fukuoka, Oita, Saga, Kumamoto, Miyazaki, and Kagoshima.

The island is mountainous and volcanic; the highest peak, Aso-yama, in Higo, has a height of 5240 feet and is an active volcano. Many hot springs and solfataras are found in the island. Coal is found in many places and is extensively mined at Takashima, Karatsu, etc. Copper and antimony are also found. Hizen and Satsuma are noted for their potteries, and Arita and Imari ware are well known. Besides the usual rice, wheat, millet, hemp, and beans, Kiushu produces tea, tobacco, and vegetable wax. The island is remarkable for the broken character of its coasts, especially on the west side. It has many good harbors. Nagasaki (q.v.) is the treaty port, but in 1889 five special ports of export were opened: Moji, Hakata, Karatsu, Misumi, and Kuchinotsu. Railways have been introduced and run from Moji, a new town built by the railway, opposite Shimonoseki, to Kumamoto and Kagoshima, with several short branch lines, chiefly coal roads, that to Nagasaki (80 miles) being the longest. Kiushu is rich in historical associations. It was from Hyuga that Jimmu-Tenno (q.v.) set out on his conquering and civilizing mission; Jingo-Kogo (q.v.) started from Kiushu on her expedition to Korea, and it was from this island that Taikosama's expedition for the conquest of Korea set out in 1592. In 1542, when Pinto discovered Japan, it was into a Kiushu harbor he sailed. Christianity was first proclaimed here by the Jesuits, and here was their sorest persecution; and until the opening of the country by treaty, Japan's commercial transactions with Europe were conducted here.

KIUSTENDIL. See KOSTENDIL.

KIVA, kē'vā. The Hopi name for the ceremonial chamber in an Indian pueblo. In the older ruins of the Southwest the kiva is usually a circular underground room, but in the modern villages they are most frequently rectangular and above ground. The entrance is always through the roof. Consult Victor Mindeleff, "Study of Pueblo Architecture," in *Eighth Report of the Bureau of American Ethnology* (Washington, 1891), and P. E. Goddard, *Indians of the Southwest* (New York, 1913).

KIWI, kē'wē (Maori name, and in native speech usually doubled, *kiwi-kiwi*, in imitation of the bird's repetitive notes). One of the small, wingless, archaic birds of New Zealand composing the genus *Apteryx*, which is considered by some a family (Apterygidae) or as an ordinal group (Apteryges) of the subclass Ratitae (q.v.), and by others only a genus of an order (*Megistanes*), which includes the moas, emus, and cassowaries. For full account, see **APTERYX**.

KIZILBASH, kiz'il-bāsh' (Turk., red head). A nickname applied by the orthodox Turks to some of the more or less heretical peoples of western and Central Asia. It is said to have been first used in the sixteenth century to distinguish in Persia the "Persianized Turks" (the ruling class), who were Shiites and wore red caps, from the orthodox Sunnites, who wore green caps and were known as Yefhilbash. Soon

after, it was applied to the Shiite Turks from Persia settled in Asia Minor and elsewhere. Today the word is used of peoples of doubtful ethnic stock from the Mediterranean to the Hindu Kush. The Kizilbash of Afghanistan, where they settled during the reign of Nadir Shah (1737), are generally spoken of as "Persianized Turks." Their physical type seems to be largely Aryan. The physical type, religion, social institutions, etc., of these people vary not a little in the different parts of the country, but all are chiefly pre-Osmanli and perhaps even pre-Islamic. With certain other groups, such as the Taktadji, Yezidi, Ansariyeh, etc., they may represent the older Aryan population of these regions. Among their Christian neighbors the Kizilbash of Asia Minor have a good reputation, but they are more or less hated and despised by the orthodox Turks. Among them hero worship still survives, and their marriage customs are of the pre-Islamic Aryans, some of them suggesting old Hellenic affiliations. Consult Petersen and Von Luschan, *Reisen in Lykien* (Vienna, 1889), and Chantre, *Recherches anthropologiques dans l'Asie occidentale* (Lyons, 1895).

KIZIL IRMAK, kiz'il ēr-māk' (Lat. *Halys*) The longest river of Asia Minor, rising in the Karabel Dag east of the town of Sivas (Map. Turkey in Asia, C 2). It flows at first southwest and then, describing a semicircle, empties into the Black Sea by a large delta. Its length is over 500 miles, but its varying width and depth render it all but useless for navigation. Its chief tributaries are the Delidje and the Gok.

KJELLMAN, kyēl'mán, FRANS REINHOLD (1846-1907). A Swedish botanist. He studied at the University of Upsala, where in 1883 he became professor of botany and senior member of the faculty of philosophy. He accompanied Nordenskjöld on his exploration of the Arctic Ocean and reported the results of his numerous studies of plants which grow in the extreme north in the scientific report of the Vega expedition. In 1881 he was elected to membership in the Academy of Sciences of Stockholm.

KJERULF, kyā'rulf, HALFDAN (1815-68). A noted Norwegian composer, born in Christiania. He was at first intended for the law, but gave up his legal studies and took up music in Leipzig. His compositions were mainly songs, in many instances written for and sung by Sontag, Jenny Lind, and Christine Nilsson, who made them popular throughout the world. Apart from the value of his songs and piano-forte compositions, which are typically Scandinavian and in many instances models of great melodic excellence, he has exercised a powerful influence in the development of the purely national Norwegian type and inspired Nordraak and the young Grieg (q.v.). He died in Christiania, where a monument to his memory was erected in 1874.

KJERULF, THEODOR (1825-88). A Norwegian geologist, born in Christiania and educated there and at Kongsberg. In 1850 he studied the volcanos in Iceland. From 1851 to 1853 he studied in Germany, under Bischoff at Bonn and Bunsen at Heidelberg. He made a special study of the disputed Christiania region, and wrote *Das Christiania Silurbecken* (1855) and *Veiviser i Christiania Omegn* (1857). In 1857, Dahll, he began his valuable charts and profiles, and he was appointed professor of geology at Christiania, and director

of the Geological Survey in 1858. In the latter post he continued his studies of southern Norway and in 1879 published *Udsigt over det syd-lige Norges Geologi*. He held the old catastrophic theory in geology. Kjerulf was a contributor to belles-lettres also; his *Digte og Skitser* were edited by H. Lassen in 1896.

KJÖBENHAVN, kē'ben-häv'n. The Danish form of the name Copenhagen.

KLACZKO, kläch'kò, JULIAN (1828-1906). A Polish publicist and critic, born of Jewish parents in Vilna. He made his literary début in 1839 and published his *Sonnets* in 1843. He became famous through his political pamphlet, *Die deutschen Hegemonen* (published in Berlin in 1849). In 1849 he went to Paris and became a contributor to the *Revue des Deux Mondes* and coeditor of *Wiadomości polskie*, a Polish periodical. In his many essays, a number of which appeared in the latter periodical, he tried to prove the possibility of a restoration of Poland and, actuated by hatred of Prussia, advocated an alliance between Austria and France. As a result of the war of 1866, he was appointed Court Councilor in the Austrian Ministry of Foreign Affairs in 1869, but retired in 1870 and, after a sojourn in Italy, returned to Paris in 1875. The most important of his works are: *L'Agitation unitaire en Pologne* (1862); *La poésie polonaise au 19ème siècle* (1862); *Les préliminaires de Sadowa* (1868-69); *L'Union de la Pologne et de la Lithuanie* (1869); *Causeries florentines* (1880; Polish trans., 1884); *Rome et la renaissance* (1898; Polish trans., 1900). The political disclosures in his *Deux chance-lieurs*, *Gortchakoff et Bismarck* (3d ed., 1877), created a sensation. The articles published in his *Polish Gazette* appeared in four volumes under the title *Polish Annals* (Paris, 1865).

KLADDERADATSCH, klä'de-rä-däch'. A popular comic paper, founded in 1848 by David Kalisch and issued weekly at Berlin. Its name is taken from a North German expression intended to convey the effect of a clattering fall. The paper is especially devoted to political satire and attracted attention through its series of caricatures of Napoleon III and Bismarck.

KLADSKO, kläts'kò. See GLATZ

KLAFSKY, kläfs'kè, KATHARINA (1855-96). A celebrated Hungarian dramatic soprano, born in St. Johann. She began her career as a chorus singer at the Comic Opera of Vienna. In 1875 she joined the Salzburg Opera in a similar capacity, but also appeared occasionally in minor parts. Angelo Neumann (q.v.) discovered her talent and engaged her for the Leipzig Opera in 1876. As she had never studied singing, her duties there were at first the same as at Salzburg, but at the same time she was trained by Sucher and Geisler. After three years she appeared in more important rôles, and when Neumann in 1882 organized his Wagner company he engaged her as alternate with the famous Reicher-Kindermann. Her success as Brünnhilde at once placed her in the front rank of the great Wagner singers. From 1886 till her death she was the principal star of the Hamburg Opera. In 1895-96, as a member of Mr. Damrosch's company, she took New York by storm and signed a contract with the Metropolitan Opera House. Just before embarking for America she died at Hamburg. Bülow (q.v.) considered her the greatest *Fidelio* of the century.

KLAGENFURT, klä'gen-furt. The capital of the Crownland of Carinthia, Austria, and

seat of the Bishopric of Gurk, situated near the Glan River, 2 miles east of Lake Wörther, and 40 miles north-northwest of Laibach (Map: Austria, D 3). Among the prominent buildings are the old cathedral, dating from the beginning of the seventeenth century, the House of Estates, with its armorial hall containing the ancient stone on which the dukes of Carinthia sat while receiving the homage of their vassals; the parish church; the Museum Rudolfinum, with a number of collections; a library of 65,000 volumes, the episcopal palace; the town hall, and the new hall of the Musical Union. The principal square is adorned with a stone fountain of a dragon dating from 1590 and a bronze statue of Maria Theresa. Klagenfurt has a Gymnasium, a Realschule, a teachers' college, trade schools, a theological seminary, and a school of agriculture and mining. The chief manufactures are leather, white lead, machines, tobacco, and cloth. Much commerce passes by way of the Lend Canal to Wörther Lake. Pop., 1900, 24,314; 1910, 28,911, mostly Germans.

KLAMATH, klä'mat. A tribe centring about the lakes and river of the same name in southern Oregon, which, with the adjoining Modoc (q.v.) of California, makes up the Lutuamian linguistic stock. Their present reservation of 1360 square miles, confirmed by Treaty of 1864, is occupied jointly with several other tribal remnants, including adopted former slaves. Their former subsistence was derived chiefly from hunting, fishing, and the gathering of camas and other roots. They were expert basket weavers, brave fighters, and, like other tribes of the region, made slaves of their captives. They are now almost all fairly civilized stock raisers. They are reported to number about 696. The most complete account of the tribe is Gatschet's monograph, "The Klamath Indians of Oregon," published as vol. iii of *Contributions to North American Ethnology* (Washington, 1883).

KLAMATH FALLS. A city and the county seat of Klamath Co., Oreg., 32 miles northeast of Pokegama, on the Southern Pacific Railroad, on Sink River, and on Lake Ewanna (Map: Oregon, D 5). It is the site of the Klamath Irrigation Project, carried on by the United States Reclamation Service, has abundant water power (the river here having a fall of 85 feet in a mile and a half); and is the distributing centre for a rich agricultural, lumbering, and sheep and cattle raising region. There are large saw mills, cereal factories, and mineral-water bottling works. The city is a summer resort, popular for its fine fishing and hunting, and contains a Carnegie library and the lava beds, which were the scene of the Modoc Indian War of 1873. In the vicinity is the Klamath Indian Reservation, having about 1100 inhabitants. Pop., 1900, 447; 1910, 2758.

KLAMATH RIVER. A river of Oregon and northern California. It rises in Upper Klamath Lake, Klamath Co., Oreg., and flows in a generally southwesterly direction to the northeastern part of California, where it turns sharply to the northwest, entering the Pacific Ocean near Requa in Del Norte Co., Cal. (Map: California, B 1). Its length, following its major windings, is 180 miles. Klamath Lake is 4141 feet above sea level. For about the first 20 miles the stream flows through a flat, swampy country. It then breaks over a rocky ledge and begins a precipitous descent of from 100 to 200 feet a mile to its mouth. The principal tribu-

taries are the Shasta, Scott, Salmon, and Trinity rivers. The drainage area is 11,850 square miles.

KLAPKA, klöp'kó, Grőgey (GEORGE) (1820-92). A general of the Hungarian revolution of 1848. He was born at Temesvár, being the son of the burgomaster of that town. He entered the Austrian army in 1838 and rose to be lieutenant. In 1848 he left the service, but upon the outbreak of the revolution joined the cause of the Hungarians and was sent into Transylvania and then against the Serbs. After the defeat of Mészáros at Kaschau (Jan. 4, 1849) Klapka was appointed to succeed him. The plan of the Hungarian campaign in the beginning of 1849, which was carried out with such great success, was largely his work. He distinguished himself in several battles in the winter and early spring of 1849 and after acting as Minister of War for a short time took the field again in May and attained a splendid reputation by his defense of Komorn. The series of battles which he fought from July 30 to August 5 was perhaps the most brilliant episode of the whole war. After the surrender of Görgey at Világos (Aug. 13, 1849) Klapka held out until September 27, when he capitulated to General Haynau. He proceeded to England and afterward to France and Italy and settled finally in Geneva, working always for the independence of his country. In 1859 he was requested by the Sardinian government to organize an Hungarian legion, to be used against Austria, but the armistice of Villafranca destroyed his hopes of active service. After the War of 1866, in which he organized a Hungarian legion as a Prussian major general, he returned to Hungary and was elected to the Diet as a member of the Deak party. (See DEAK, FERENCZ) In 1873-74 he undertook the reorganization of the Turkish army. Late in life he started various industrial enterprises with little success. He died at Budapest, May 17, 1892. His *Memoirs* were published at Leipzig in 1850. He also wrote: *The War of Independence in Hungary and Transylvania* (1851); *The War in the East* (1855); *Recollections* (1887).

KLAPP, kláp, MICHAEL (1834-88). An Austrian journalist and author, born and educated in Prague, whence he went to Vienna in 1855. Connected with the *Ostdeutsche Post* in 1859-66, then special correspondent in Italy, Spain, and other countries for the *Neue Freie Presse*, he became in 1870 editor of the *Montagsrevue*. He gave offense by an article on the sojourn of Empress Elizabeth in Hungary, contributed by him to the *Gartenlaube*, and was obliged to resign from his position in 1877. Besides several comedies, one of which, *Rosenkranz und Guldenstern* (1878), brought out at the Burgtheatre in Vienna, was produced on all important stages of Germany, he wrote: *Komische Geschichten aus dem jüdischen Volksleben* (1859); *Vom grünen Tisch* (1865); *Bilder vom Marsfeld* (1868); *In London und unter den Feniern* (1869); *Revolutionenbilder aus Spanien* (1869), and other sketches; also the novel, *Die Bankgrafen. Roman aus der Schwindelzeit* (1877).

KLAPROTH, kláp'rót, HEINRICH JULIUS (1783-1835). A German Oriental scholar and traveler, born in Berlin. While yet in the Gymnasium, at the age of 14, he began the study of the Chinese language, a task then rendered particularly difficult by inadequate material. In 1804 he was appointed by the St. Petersburg

Academy an adjunct in Oriental languages and literatures. In the year following, under commission from the academy, he accompanied Count Golovkin's embassy to China and during a two years' absence amassed a great quantity of material for Chinese studies, including important vocabularies and extensive observations of usages and customs. A journey to Georgia and the Caucasus region was accomplished for the academy in 1807-08. From 1811 to 1814 he lived in Berlin, and, after being dismissed from his post in Russia, he went in 1815 to Paris. Through the instrumentality of Wilhelm von Humboldt, he was appointed by Frederick William III of Prussia a professor of Asiatic languages and literatures (with residence at Paris) in 1816 and was also financially aided by the King in the publication of his works. They include: *Reise in den Kaukasus und nach Georgien in den Jahren 1807 und 1808* (2 vols., 1812-14); *Geographisch-historische Beschreibung des ostlichen Kaukasus* (1814); *Asia Polyglotta* (1823); *Mémoires relatifs à l'Asie* (1824); *Tableaux historiques de l'Asie* (1826); *Collection d'antiquités égyptiennes* (1829); *Aperçu général des trois royaumes* (1833), the last valuable for the study of Japanese history. His *Lettre à M. le Baron A. de Humboldt sur l'invention de la boussole* was edited by Wittstein (Leipzig, 1885). Consult Landresse, "Notice sur M. Klaproth," in *Nouveau Journal Asiatique*, vol. xvi (Paris, 1835), and Larenaudière, "Notice sur M. Klaproth," in *Nouvelles Annales des Voyages*, vol. iv (ib., 1835).

KLAPROTH, MARTIN HEINRICH (1743-1817). A German chemist, born at Wernigerode. He was member of the Academy of Sciences and professor of chemistry at the School of Artillery and the University of Berlin. He discovered the elements uranium, zirconium, and titanium, and was one of the first chemists in Germany to recognize the value of Lavoisier's discoveries. He is also known for his analyses of minerals, published in his *Beiträge zur chemischen Kenntnis der Mineralkörper* (6 vols., 1793-1815).

KLATTAU, klát'tou (Boh. Klatovy). A town of Bohemia, Austria, situated in a fertile district, 30 miles by rail south of Pilsen (Map: Austria, C 2). It has a thirteenth-century Gothic church, a former Jesuit church with fine frescoes, an interesting town hall with a high tower, barracks, a museum, an agricultural school, and a Gymnasium. It carries on manufactures of woolen cloth, machinery, leather, lumber, wadding, chicory, and matches. Flowers are cultivated for commercial purposes. Pop., 1900, 12,793; 1910, 14,387, mostly Czechs.

KLAUS, BROTHER, OF FLUE. See FLÜE, NIKOLAUS VON.

KLAUS, klous, PETER. In German legend, a goatherd of Sittendorf, the story of whose 20 years' sleep in the mountains closely resembles the adventures later attributed to Rip Van Winkle. The tale is found in Otmar's *Volks-Sagen*.

KLAUSENBURG, klou'zen-burk (Hung. Kolozsvár). A royal free town of Hungary, capital of the County of Klausenburg and former capital of Transylvania (Map: Hungary, H 3). It is situated on the Little Szamos, 123 miles by rail north-northwest of Hermannstadt, and consists of the old inner town and five suburbs. In one of the suburbs, on a hill covered with gypsy huts, rises the citadel erected by General Steinville in 1715. In the inner town

are a fifteenth-century Franciscan church, a Reformed church built by Matthias Corvinus in 1486, and the house in which he was born. There are also a Unitarian church, several synagogues, many quaint old dwellings, the Bánffy Palace, the industrial building, and the national theatre. The western suburb contains the botanical garden, with an Italian villa and a museum. A statue of King Corvinus by Fadrusz was erected in 1902. Here is the Francis Joseph University (founded 1872), with four faculties, an attendance (1913) of 2124, and a library of 133,883 volumes. In 1902 the university opened a fine new central building. Other institutions include two higher Gymnasias, a Unitarian theological seminary with a library of 32,000 volumes, a Reformed theological academy with 19,000 volumes, an agricultural academy, a Fröbel Institute, a girls' high school, a number of special schools, an industrial museum, an ethnographic museum, a museum of technology, and a public library of 51,000 volumes. The city has the chief scientific and art organizations of Transylvania. It is the seat of a Unitarian and of a Reformed bishop. The charitable institutions are noteworthy. Klausenburg has an extensive government cigar factory (employing 1500 hands), a government railway shop, a number of distilleries, and flour mills, manufactures of farm machinery, beet sugar, cloth, paper, soap, bricks, and candles. The Transylvania nobility frequent Klausenburg in winter. Gypsy bands furnish much of the music for the public parks in summer. The town was founded by German colonists in 1173 and became a free royal town in 1405. In 1848 it was captured by the Hungarian revolutionists under Bem. Pop., 1900, 49,295; 1910, 60,808, mostly Protestant Magyars.

KLAUSTHAL, klous'tal. A town of Prussia. See CLAUSTHAL.

KLAUWELL, klou'vél, OTTO (1861-). A German composer and writer on music, born at Langensalza. He was educated at the Dresden Kreuzschule, served in the Franco-German War, and subsequently studied mathematics at the University of Leipzig. In 1872 he entered the conservatory of that city and devoted himself to music. He became a teacher at the Cologne Conservatory (1875) and in 1885 was made director of the teachers' seminary classes (for pianoforte) in connection with that institution. He is a well-known composer of chamber music and piano pieces and has written two operas: *Das Mädchen vom See* (1889) and *Die heimlichen Richter* (1902). His books include: *Der Vortrag in der Musik* (1883; Eng. trans., 1890); *Der Fingersatz des Klavierspiels* (1885); *Formen der Instrumental-Musik* (1896); *Geschichte der Sonate* (1899); and a biography of Th. Gouvy (1902).

KLAVIATUR-HARFE, klá'vè-à-tsoor'-här'fe (Ger., keyboard harp). A harp with piano keyboard, invented in 1893 by Ignaz Lutz, of Vienna. The strings are plucked by plectra, which are substituted for the ordinary hammers of the pianoforte. The tones of the instrument are full and rich, resembling those of the double-action harp. The Klaviatur-Zither, also invented by Lutz, is an instrument of similar construction.

KLAW, MARC (1858-). An American theatrical manager, born at Paducah, Ky. He studied law and was admitted to the bar, but after 1881 was engaged in theatrical management. He became a member of the firm of Klaw

and Erlanger and of other firms, coming into control of important theatres throughout the United States. In 1907 Klaw and Erlanger acquired interests in the Shubert Brothers' theatres, incorporating them as the United States Amusement Company. Later the two firms separated, but by 1913 a working agreement covering Boston and Chicago had been made, and by 1915 an agreement intended to end competition elsewhere, except in New York City.

KLEBER, klá'bär', JEAN BAPTISTE (1753-1800). A distinguished general of the French Revolution. He was born at Strassburg, the son of a builder, and after studying in the military academy at Munich, entered the Austrian army. He abandoned the military career in 1783 because, not being an aristocrat, the Austrian army offered him no promotion. He returned to France and worked as an architect till the Revolution. Joining the National Guard, he rose rapidly, being made brigadier general in 1793 for his services in the defense of Mainz. He fought bravely in La Vendée and under Jourdan as general of division at Châleroi and Fleurus (1794). He also took Maestricht and directed the siege of Mainz. After beating the Austrians repeatedly and capturing Frankfurt, he held for a brief time the command of the French armies under the Directory. In 1798, however, he accompanied Bonaparte to Egypt, was dangerously wounded at the capture of Alexandria, but recovered so as to take part in the expedition to Syria, and won the battle of Mount Tabor. When Bonaparte left Egypt, he intrusted the chief command there to Kléber, who concluded a convention with Commodore Sidney Smith for the evacuation of the country; but, on Admiral Keith's refusal to ratify this convention, Kléber, adopting the bold resolution of reconquering the country, attacked and destroyed the Turkish army at Heliopolis, March 20, 1800, and retook Cairo. During an attempt to conclude a treaty with the Turks Kléber was assassinated by a Turkish fanatic at Cairo, June 14, 1800. This murder ended the career of a man who had shown himself not only a distinguished general but also a gifted administrator in his management of affairs in Egypt with discontented troops and inadequate financial support. His heart is buried under his monument in Strassburg. Consult: Ernouf, *Le général Kléber* (Paris, 1867); Pajol, *Kléber, sa vie, sa correspondance* (ib., 1877); Teicher, *General Kleber* (Strassburg, 1890); Rousseau, *Kléber et Menou en Egypte* (Paris, 1900); Klæber, *Leben und Taten des französischen Generals, J. B. Kleber* (Dresden, 1900).

KLEBS, klaps, EDWIN (1834-1913). A German pathologist, born at Königsberg. He studied at the universities of Königsberg, Würzburg, Jena, and Berlin, in 1861 was appointed assistant to Virchow at Berlin, and in 1866 became professor of pathological anatomy at Bern. After service in the Franco-Prussian War he held professorships at Würzburg (1872-73), Prague (1873-82), and Zurich (1882-92). In 1895 he became director of a bacteriological laboratory in Asheville, N. C.; in 1896 he was a professor at the Rush Medical College in Chicago; and afterward was connected with the universities of Hanover, Lausanne, and Berlin. His contributions to pathological science are very important. With Tomasi-Crudeli he announced in 1879 the discovery of a bacillus of malaria. It was later discovered, however, that this germ

had no connection with malaria, the cause of which was traced to the organism discovered by Laveran, another investigator. His publications include: *Handbuch der pathologischen Anatomie* (1867-80); *Beiträge zur pathologischen Anatomie der Schusswunden* (1872); *Studien über die Verbreitung des Kretinismus in Oesterreich* (1877); *Allgemeine Pathologie* (1887-89); *Kausale Behandlung der Diphtherie* (1894).

KLEBS, GEORG (1857-). A German botanist. He was born at Neidenburg, East Prussia, and studied at the universities of Königsberg, Strassburg, Würzburg, and Tübingen; was assistant in the Botanical Institute at Strassburg and at Tübingen; and became professor of botany at Basel in 1887, at Halle in 1893, and at Heidelberg in 1908. Klebs wrote *Die Bedingungen der Fortpflanzung bei Algen und Pilzen* (1896) and *Willkürliche Entwicklungsänderungen bei Pflanzen* (1903).

KLEENEBOK, klēn'bōk (Dutch, little goat). Dutch name for a duiker (q.v.).

KLEIN, klin, BERNHARD (1793-1832). A German composer, born at Cologne. He gained some musical education from his father, who was a double-bass player, and in 1812 went to Paris, where he studied under Cherubini and did considerable research work at the conservatory library. Upon returning to Cologne he was made musical director at the cathedral and in 1819 was sent to Berlin as government inspector of the music schools there. In that city he became connected with the school for organists, was made director of music at the university and teacher of singing at the Hochschule. In 1823 he went to Rome, but after a few years returned to Berlin, where he died. He wrote two operas, *Dido* (1823) and *Ariadne* (1825), but was better known for his oratorios, *Job* (1820), *David* (1830), and *Jephtha* (1828), and for his masses, psalms, and hymns.

KLEIN, BRUNO OSCAR (1858-1911). A German-American composer, born in Osnabrück, Germany. His earliest instruction he received from his father, who was the organist of the cathedral. After having completed the course at the Gymnasium of his native town Klein was sent to the Königliche Musikschule in Munich, where he studied under Rheinberger, Carl Baermann, and Wüllner. In 1878, after his graduation from the conservatory, Klein came to the United States. He married Miss Emily Schaefer, a talented young pianist, and together they made a tour of the principal cities. In 1884 he settled permanently in New York, where he was appointed organist at St. Francis Xavier's and became head of the piano department at the convent of the Sacred Heart. He was also elected professor of counterpoint and composition at the National Conservatory in 1888. He died in New York. Among his principal compositions are the opera *Kensilworth* (Hamburg, 1895); for orchestra, *Scènes de ballet*, op. 19; *Liebestud und Hochzeitsklänge*, op. 29; *Concerto-overture*, op. 31; *American Dances* (two series); *Theme and Variations*; two piano concertos; vocal works with orchestra: *Columbus Cantata*; *Wallfahrt nach Kevlaar*, op. 17; *Ingeborg's Klage*, op. 27; five masses; excellent chamber music; piano pieces; songs.

KLEIN, CHARLES (1867-1915). An American playwright, born in London, England. He was educated at North London College and early came to New York City, where for a time he was play censor for Charles Frohman. His plays

include: *A Mile a Minute* (1890); *By Proxy* (1892); *The District Attorney* (1895); *Two Little Vagrants* (1896); *Heartsease* (1897); *The Charlatan* (1898); *A Royal Rogue* (1900); *The Auctioneer* (1901); *The Hon John Grigsby* (1902); *Mr. Pickwick* (1903); *The Music Master* (1904); *The Lion and the Mouse* (1905); *The Daughters of Men* (1906); *The Step-Sister* (1907); *The Third Degree* (1908); *The Nest of Kin* (1909); *The Gamblers* (1910); *Maggie Pepper* (1911); *The Outsiders* (1911); *The Ne'er Do Well* (1912); *The Money-makers* (1914). In *The Auctioneer* and *The Music Master* David Warfield had great success, and *The Lion and the Mouse* was of unusual power.

KLEIN, FELIX (1849-). One of the most eminent German mathematicians of his time. He was born April 25, 1849, at Düsseldorf, studied at Bonn, and when only 17 was made assistant to Plücker in the Physical Institute. The following year (1868) he took his doctor's degree and then went to Berlin and later to Göttingen, where he assisted in editing Plücker's works. He entered the Göttingen faculty in 1871, became professor of mathematics at Erlangen in 1872, and subsequently held professorships at the Munich Technical Institute (1875-80) and at the universities of Leipzig (1880-86) and Göttingen (1886-1912). He was sent by the Prussian government to represent the university interests at the World's Fair, Chicago, in 1893, and his colloquium held at that time was attended by some of the leading American mathematicians. No one else in Germany has exercised so great an influence on American mathematics, Klein's pupils being found in most of the leading institutions of this country. Professor Klein was made president of the International Commission on the Teaching of Mathematics in 1908, the commission having been appointed by the fourth International Congress of Mathematicians, held at Rome in that year. His contributions to mathematics have been too extensive to admit of more than a brief list. The following are a few of his important works: *Ueber Riemanns Theorie der algebraischen Funktionen und ihrer Integrale* (1882); *Vorlesungen über das Ikosaeder und die Auflösung der Gleichungen vom 5ten Grade* (1884; Eng. trans. by G. G. Morrice, *Lectures on the Icosahedron; and the Solution of Equations of the Fifth Degree*, 2d rev. ed., New York, 1914); *Ueber die hypergeometrische Funktion* (1894); *Ueber lineare Differentialgleichungen der 2. Ordnung* (1894); *Theorie des Kreuzels* (2 vols., 1897-98), with Sommerfeld; *Vorlesungen über die Theorie der elliptischen Modulfunktionen* (1890-1912); *Mathematical Theory of the Top* (Princeton address, New York, 1897); *Vorträge über ausgewählte Fragen der Elementargeometrie* (1895; Eng. trans. by W. W. Beman and D. E. Smith, *Famous Problems of Elementary Geometry*, Boston, 1897); *Evanston Colloquium* (1893) before the Congress of Mathematics, reported and published by Ziwet (New York, 1894); *Elementarmathematik vom höheren Standpunkte aus* (Leipzig, 1908). Klein also edited the works of Möbius (1885-87). In 1875 he became one of the editors of the *Mathematische Annalen*, and in 1898 one of the editors of the *Encyclopädie der mathematischen Wissenschaften* (chief editor of vol. iv, "Mechanik"). In 1897 he began, jointly with Fricke, the publication of *Vorlesungen über die Theorie der automorphen Funktionen*.

KLEIN, JAKOB THEODOR (1685-1750). A German zoölogist, born at Königsberg. He studied law at the University of Königsberg and then traveled in Germany, England, Holland, and the Tirol. Elected municipal secretary of Danzig, which city he represented for a time at the Polish court, he established at Danzig a natural-history cabinet and a botanical garden and was a founder there of the Natural History Society. His natural-history cabinet, together with many valuable drawings, was transferred from Danzig to Bayreuth in 1740. He devised a formal system of classification, based on the number, form, and manner of disposal of the limbs. His *Summa Dubiorum circa Classes Quadrupedum et Amphibiorum in Caroli Linnei Systemate Naturæ* (1743) was a violent attack on the Swedish naturalist.

KLEIN, JULIUS LEOPOLD (1804-76). An Austrian dramatist and literary historian, born at Miskolcz, Hungary. He was educated at Vienna and Berlin, where he studied medicine. He did not practice, however, but devoted himself instead to the production of plays, such as the historical tragedies, *Maria von Medici* (1841), *Luynes* (1842), *Zenobia* (1847), *Moreto* (1859), *Maria* (1860), *Strafford* (1862), *Voltaire* (1862), and *Heliodora* (1867), and the comedies *Die Herzogin* (1848) and *Ein Schutzling* (1850). He died before the completion of his greatest work, *Geschichte des Dramas* (13 vols., 1865-76), the most exhaustive that had yet appeared upon the evolution of the drama from Greece and Rome to Spain, Italy, and England. His dramatic works appeared in seven volumes (1871-72).

KLEINERT, kli'něrt, PAUL (1837-) A German . . . He was born at Vielguth in Silesia. . . to 1857 he studied at the universities of Breslau and Halle. In 1861 he became deacon and teacher of religion at the . . . school at Oppeln. In 1864 he went . . . where he was for some time teacher at a grammar school and lecturer at the university. He was appointed in 1868 extraordinary professor of the Old Testament and of practical theology at the University of Berlin. In 1885-86 he was rector of the University of Berlin. Kleinert published. *Obadiah-Zephaniah wissenschaftlich und für den Gebrauch der Kirche dargestellt* (2d ed., 1893), *Ueber das Buch Koheleth* (Berlin, 1864); *Augustin und Goethes Faust* (1866); *Das Deuteronomium und die Deuteronomiker* (1872), *Untersuchungen zur alttestamentlichen Rechts- und Litteraturgeschichte* (1872), *Abriss der Einleitung zum alten Testament in Tabellenform* (1878), *Abhandlungen zur christlichen Kultus- und Kulturgeschichte* (1889); *Der preussische Agendenentwurf* (1894), *Die Propheten Israels in sozialer Beziehung* (1905), *Homiletik* (1907); *Musik und Religion* (1908). In 1892 he was appointed counselor in chief of the consistory for Prussia.

KLEINMICHEL, klin'mik'el, RICHARD (1846-1901). A German composer and pianist, born in Posen. He received his first instruction from his father, who was a bandmaster and later conductor at the Hamburg Opera. From 1863 to 1866 he was a pupil of the Leipzig Conservatory. After graduation he settled in Hamburg as a teacher and concert pianist and removed in 1876 to Leipzig, where in 1882 he was appointed conductor of the opera. The last years of his life he spent in Berlin. His piano

scores of Wagner's *Tetralogy*, *Meistersinger*, and *Parsifal* are models of their kind. His original works include two operas, *Manon* (1883) and *Der Pfeifer von Dusenbach* (1891); two symphonies, piano pieces, among them some studies of exceptional merit.

KLEIST, klist, EWALD CHRISTIAN VON (1715-59). A German poet, born at Zeblin, near Köslin, in Pomerania and educated at Königsberg. He entered the Danish army in 1736, but four years afterward was appointed a lieutenant in the Prussian service. Soon after he became acquainted with Gleim, who encouraged him in his poetic attempts, and in 1749 with Ramler, who did much to cultivate his style. In the first Silesian war he advanced rapidly, he became major in 1757 and two years later was fatally wounded at Kunersdorf. While stationed at Leipzig, Kleist made the acquaintance of Lessing, and a very close friendship sprang up between the two men. The character of Von Tellheim in Lessing's *Minna von Barnhelm* is supposed to have been modeled on that of Kleist, whose death deeply affected Lessing. His style is simple and correct, and his treatment of nature beautiful and fresh. His best work was *Der Frühling* (1749), a descriptive poem after the manner of Pope and Thomson. He published two editions of his *Gedichte* (1756-58), and Ramler edited his complete works (1760). The best edition is by Sauer (1880-82). Consult: Chuquet, *De Ewaldi Kleistii Vita et Scriptis* (Paris, 1887), Pröhle, *Friedrich der grosse und die deutsche Literatur* (1872), T. Baechtold, *Kleine Schriften* (1899).

KLEIST, HEINRICH VON (1777-1811). A talented German dramatist, born in Frankfort-on-the-Oder, Oct. 18, 1777, the son of a Prussian officer. Left an orphan at 11, he entered the army at 16; left it in 1799; studied history, literature, and philosophy; obtained a civil post which he lost after the battle of Jena (1806); and during the next five years, in an environment of literary indifference and national disgrace, produced several dramas of great merit and greater promise. The full realization of his powers he denied himself and Germany by killing Henriette Vogel, the wife of a Berlin merchant, and himself by a mutual agreement. The tragedy took place at Wannsee, near Potsdam, Nov. 21, 1811. Kleist's dramas still hold the stage. *Der zerbrochene Krug* (1811), portraying German village life, is regarded by many as the best one-act comedy in German. Noteworthy also are his tragedies, *Die Familie Schroffenstein* (1803), *Amphitryon* (1807), *Penthesilea* (1808), and the posthumously printed *Prinz von Homburg* (1821), the romantic drama *Kathchen von Heilbronn* (1810), and the patriotic *Hermannsschlacht* (1821). Kleist wrote also a volume of *Erzählungen* (1810-11), among them the masterly story *Michael Kohlhaas* (1810); a few poems; and parts of another tragedy, *Robert Guiscard*. Kleist's fame ripened slowly. During his lifetime only *Der zerbrochene Krug* and *Kathchen von Heilbronn* were put on the stage. He emulated Shakespeare and the Greeks. His *Works* were first collected incompletely (3 vols., Berlin, 1826). There are several modern editions, the best of which is the critical edition by Schmidt, Minde-Pouet, and Steig (5 vols., 1904). His letters have been edited by Bulow (Berlin, 1848), Koberstein (ib., 1860), and Biedermann (Breslau, 1888). Consult: Wilbrandt, *Heinrich von Kleist* (Nörd-

Hagen, 1863); Zölling, *Heinrich von Kleist in der Schweiz* (1882); Lloyd and Newton, *Prussia's Representative Men* (London, 1876); E. Schmidt, *Charakteristiken* (1886); T. Minor, "Studien zu H. von Kleist," in *Euphorion* (1894); K. H. Becker, *Kleist and Hebbel* (1904); Roettcker, *H. von Kleist* (1907); Herzog, *Heinrich von Kleist* (1911); Julius Hart, *Das Kleist-Buch* (1912); Brahm, *Heinrich von Kleist* (new ed., Berlin, 1913).

KLEIST VON NOLLENDORF, fön nöl'len-dorf, FRIEDRICH HEINRICH FERDINAND EMIL, Count (1762-1823). A Prussian general. He was born in Berlin, acted as court page, and in 1778 entered the army. He served as captain in the war with the French revolutionary government and in 1803 had risen high in the King's favor and was promoted adjutant general. He served under York in the war with Russia (1812). A year afterward he served against France with the rank of lieutenant general, and he distinguished himself at Halle and Bautzen and was Prussian Plenipotentiary in the negotiation of the truce of Poischwitz. His title was a reward for great bravery at Nollendorf. He fought at Dresden and Leipzig and in 1814 was appointed general of infantry. After the war he was commander in Saxony and on his retirement in 1821 was promoted to the rank of field marshal.

KLEMM, klēm, FRIEDRICH GUSTAV (1802-67). A German culture historian, born at Chemnitz. He studied at Leipzig and later went to Dresden, where he was appointed assistant and finally (1852) chief librarian at the Royal Library. Among his publications are a *Geschichte von Bayern* (1820); *Attila nach der Geschichte, Sage und Legende* (1827); a *Handbuch der germanischen Altertumskunde* (1835); *Allgemeine Kulturgeschichte der Menschheit* (10 vols., 1842-53); *Allgemeine Kulturwissenschaft* (1854-55); *Vor fünfzig Jahren* (1865).

KLEMM, HEINRICH (1819-86). A German publisher, born at Zöllmen, near Willsdruff, Saxony, and a tailor by trade. He founded in 1849 with G. A. Müller the *Europäische Modezeitung* in Dresden and in 1850 the publishing firm of H. Klemms Verlag. He was the author of *Illustriertes Handbuch der höheren Bekleidungskunst* (53d ed., 1899) and was known particularly through his large collection of incunabula, which was bought by the Saxon government.

KLENGEL, klēng'el, AUGUST ALEXANDER (1783-1852). A German composer, born at Dresden. He studied with Milchmeyer and Clementi, traveling with the latter in Germany and Russia. He lived in St. Petersburg (1805-11) and then, after a two years' stay in Paris, went to Italy and England. In 1816 he returned to Dresden, where he was made organist of the Roman Catholic church. Klengel was an accomplished pianist and organist, but was better known as a composer. His strict contrapuntal style gained for him the nickname Kanon-Klengel. *Les avant-coureurs* (canons) and a series of 48 fugues and 48 canons were his best works, but he also wrote some excellent salon music.

KLENGEL, JULIUS (1859-). A celebrated German violoncellist, born at Leipzig. He studied the cello with Emil Hegar and composition with Jadassohn. In 1874 he joined the Gewandhaus Orchestra, of which he subsequently became first cellist. While retaining this post, he made extensive concert tours of

Germany, Holland, England, and Russia. In 1881 he was appointed professor at the Leipzig Conservatory. As a virtuoso, he is unsurpassed, possessing all the qualities of an artist of the first rank. On the merely technical side he has, perhaps, never been equaled for the rapid and clear execution of passages that would seem possible only on the violin. As a member of the Gewandhaus Quartet, he soon established his reputation as one of the world's greatest ensemble players. His compositions, many of which are works of sterling merit, include four concertos for his instrument; two string quartets; a sonata for violoncello; a piano trio; concert pieces for one, two, and four cello.

KLENZE, klēnt'se, LEO VON (1784-1864). A German architect, born in the Principality of Hildesheim. He was a pupil of the Academy of Architecture in Berlin and later of Durand and Percier in Paris, where he specialized in decorative painting. Afterward he spent some time traveling in England and Italy. On his return to Germany he was appointed architect to Jerome Bonaparte, King of Westphalia, and from 1815 to 1839 held a similar position at Munich. His buildings in Munich show that he worked in many styles, one of which, the Florentine, he introduced into Germany, but his chief distinction was won in the field of Neo-Greek design. His works include the Pinakothek (1826), Glyptothek (1830), Odeon and Propylaea at Munich, and the Temple of Walhalla (which recalls the Parthenon), near Regensburg (Ratisbon) on the Danube. In 1839 he went to St. Petersburg, where he built the Art Museum, known as the Hermitage, for the Emperor of Russia. Klenze was also successful in the field of landscape painting, both with oil and water colors. He was the author of various works on architecture, all of which reveal his admiration for Hellenic art. Among them are: *Versuch einer Wiederherstellung des toscanischen Tempels nach seiner historischen und technischen Analogie* (1822), *Der Tempel des olympischen Jupiter zu Agrigent* (1827); *Aphoristische Bemerkungen, gesammelt auf einer Reise nach Griechenland* (1838); *Die Walhalla in artistischer und technischer Beziehung* (1843).

KLEPHTS, klēfts (NGk. κλέφτης, *klephtēs*, variant of NGk., Gk. κλέπτης, *kleptēs*, thief, from κλέπτειν, *kleptein*, to steal). The Greeks who fortified themselves in the mountain strongholds of Macedonia and northern Greece after the conquest of Greece by the Turks in the fifteenth century and gradually, with accessions of Albanians, developed into communities of brigands. In the Greek War of Independence the klephts were important allies of the patriots. Their existence as a class came to an end with the suppression of Greek brigandage.

KLEPTOMANIA (from Gk. κλέπτειν, *kleptein*, to steal + *μανία*, *mania*, madness). An impulsive appropriation of the property of others, due to mental impairment. Medically the term denotes a disorder of volition termed an impulsion and constituting a symptom of insanity. In the old nomenclature the term was restricted to a variety of partial degenerative insanity of the impulsive type, which included in the same category dipsomania and pyromania. Properly kleptomania is characterized by impulsive acts done without a clear reasoning process, under stress of an imperative idea. Kleptomaniacs appropriate, generally, bright or attractive and useless articles, stowing

them away often without concealment, never putting them to any use or obtaining any gain from them. Frequently the articles are stolen openly, in the presence of others. Largely the kleptomaniac is held accountable for his theft; irresistible impulse alone not constituting a legal defense. Consult: Spitzka, *Manual of Insanity* (New York, 1887); Kirchhoff, *Handbook of Insanity* (ib., 1895); Defendorf, *Clinical Psychiatry* (ib., 1906); White, *Outlines of Psychiatry* (ib., 1914). See INSANITY.

KLESEL, M. See KILLES, M.

KLETTENBERG, klēt'ten-bĕrk, SUSANNE KATHARINE VON (1723-74). A German Pietist, born in Frankfurt. She was a close friend of Goethe's mother and exercised considerable influence upon the youthful poet, who became interested in the alchemistic studies to which her mystic tendencies had led her. Her life and character are reflected in "Bekenntnisse einer schönen Seele," in Goethe's *Wilhelm Meisters Lehrjahre*. She entered into relations with the Herrnhuters and through Goethe became acquainted with Lavater. Several of her spiritual songs and religious essays are preserved in Sappenberg, *Reliquien des Frauens Susanne Katherina von Klettenberg* (Hamburg, 1849). Consult Dechent, *Goethes schöne Seele* (Gotha, 1896).

KLEVE. See CLEVES.

KLEFOTH, klē'fōt, THEODOR FRIEDRICH DETLEV (1810-95). A German Lutheran theologian born at Korchow in Mecklenburg. After studying theology in Berlin and Rostock, he became preacher in Ludwigslust in 1840 and from 1850 until his death was associated with the superior ecclesiastical council in Mecklenburg-Schwerin and was its president (1886-95). He was instrumental in forcing Michael Baumgarten (q.v.) to leave his chair at Rostock. He wrote: *Einleitung in die Dogmengeschichte* (1839); *Theorie des Kultus der evangelischen Kirche* (1844); *Liturgische Abhandlungen* (2d ed., 1858-69); *Christliche Eschatologie* (1886), a posthumous work, edited by Witte; *Lehre von den letzten Dingen* (1895); and numerous commentaries on the Old Testament prophets.

KLIK'ITAT. A Shahaptian tribe, formerly residing about the river of the same name, a northern affluent of the Columbia, in southern Washington. Their common name is of Chinookan origin and signifies 'beyond,' i.e., east of the Cascade Mountains. They call themselves by a name signifying 'prairie people.' Although few in number, they were enterprising and aggressive and were the traders between the tribes east of the Cascades and those on the west. About 70 years ago they crossed the Columbia and overran the Willamette region as far south as the Umpqua, but afterward withdrew to their proper country. They joined in the Yakima Treaty of 1855 and are now chiefly on the Yakima reservation in Washington; their number is given as 405. Consult Lewis, *Tribes of the Columbia Valley and the Coast of Washington and Oregon* (Lancaster, Pa., 1906).

KLINCKOWSTRÖM, klīnk'ō-strēm, AXEL ALEXANDER CAMILLE RUDOLF EMANUEL, BARON (1887-). A Swedish explorer and author, born in Darmstadt, the son of a member of the Swedish Lower House. He was educated at Stockholm, Ultuna, and Würzburg. He was geologist to the Nordenskjöld expedition of 1890 to Spitzbergen, explored Surinam in 1891-2, taught zoology at the University of Stock-

holm in 1895-1903, took part in the Swedish south-polar expedition of 1903-04, traveled in Iceland in 1909-10, was a member of the Stackhouse expedition of 1911, and explored Greenland in 1913. Besides important technical works, notably *Zur Anatomie der Lidentaten*, he wrote: *Tre månaders dag* (1891); several volumes of verse, including *Sagner och sånger* (1893) and *Fornsånger* (1895); a dramatic poem, *Frödis* (1898), the text of an opera, *Valdemarskatten*, for which Hallén composed music; a play, *Olof Trätälja* (1908), *Bland vulkaner och fågelberg* (1911). In 1907 he received a prize for literature from the Swedish Academy.

KLINDWORTH, klīnt'vōrt, KARL (1830-1916). A German pianist and teacher, born at Hanover. His father was a proficient amateur musician; but, aside from his home advantages, the boy was largely self-taught, although he studied the violin under a careful master. At the age of 17 he became the conductor of a traveling opera troupe. In 1849 he taught the violin in his native city of Hanover, but soon gave it up and devoted himself to the piano-forte. He studied for two years with Liszt. From 1854 to 1868 he met with great success in England as a pianoforte teacher and concert pianist, after which he accepted Rubinstein's invitation to become the professor of pianoforte at the Imperial Conservatory at Moscow. It was during this period that he completed his splendid pianoforte scores of Wagner's *Ring des Nibelungen* and brought out a complete revised edition of the compositions of Chopin. In 1882 he took up his residence in Berlin and up to 1892 was conductor of the Wagnerverein and, together with Joachim and Wullner, led the Philharmonic concerts. He established a conservatory of music in the German capital, which experienced considerable success. In 1893 he moved to Potsdam. Subsequently he spent his time between that city and Berlin, devoting himself entirely to private teaching and editorial work. As a teacher, he had remarkable success, pupils going to him from all parts of the world. His compositions, besides those already mentioned, include pieces for the pianoforte, arrangements of Schubert's *C Major Symphony*, and Tchaikowsky's symphonic poem *Francesca da Rimini*.

KLINGER, klīng'ĕr, FRIEDRICH MAXIMILIAN VON (1752-1831). A German writer, born of poor parents at Frankfort-on-the-Main. He was educated at Giessen and in 1775 appeared as the author of the tragedy *Die Zwillinge*, which won the Schroeder prize. He was a contemporary of J. M. R. Lenz, "Maler" (Friedrich) Müller, and C. F. D. Schubart, and one of the most conspicuous figures in the "Sturm und Drang" period of German literature—which period, furthermore, obtained its name from his drama of that title, published in 1776. In 1780 he went to St. Petersburg, where he entered the Russian army. Previous military experience, as a lieutenant in Wolter's volunteer corps during the War of the Bavarian Succession, proved valuable; by 1798 he was a major general and by 1811 lieutenant general. He married a natural daughter of Empress Catharine. His works of prose fiction assert an ethical purpose, but offend by want of taste. The same may be said of his dramas. His prose *Faust*—or, in full, *Fausts Leben, Thaten und Höhenfahrt* (1791)—in which the hero is represented as the

inventor of printing, has some historical value. His later volumes, such as *Der Weltmann und der Dichter* (1798) and *Betrachtungen und Gedanken über verschiedene Gegenstände der Welt und der Litteratur* (3 vols., 1802-05—a selection of which appeared in Reclam's *Universalbibliothek*), though at times bitter and disappointed in tone, are more rational and stimulating. The *Sturm und Drang* may be found in reprint as No. 248 of the *Reclamsche Universalbibliothek*. The last edition of the collected works was published at Stuttgart in 1841. A selection (8 vols.) was published also at Stuttgart in 1878-80. Consult further: Erdmann, *Klingers dramatische Dichtungen* (1877); Schmidt, *Lenz und Klinger* (Berlin, 1878); the study by Rieger (2 vols., Darmstadt, 1880-96); Prosch, *Klingers philosophische Romane* (Vienna, 1883); vol. i of *Stürmer und Dranger* (Stuttgart, 1883) in Kürschner's *Deutsche Nationallitteratur*; Philipp, *Beiträge zur Kenntnis von Klingers Sprache und Stil* (1909).

KLINGER, MAX (1857-). A German painter, etcher, and sculptor, one of the most eminent artists of his time. He was born in Leipzig, Feb. 13, 1857, studied under Gussow in Karlsruhe and later at Berlin, and made his debut in 1878 with a painting and drawings then severely criticized, but afterward bought for the National Gallery. Meanwhile he learned etching and aquatint by himself, then studied in Brussels and in Munich, in Paris (1883 et seq.), and from 1888 to 1892 in Rome, whence he returned to Leipzig. His activity falls into three periods, which, however, sometimes overlap. In the earliest (1879-86) his most important works were cycles of etchings, which, apart from the classical subjects from Ovid and from Apuleius' *Cupid and Psyche*, and a few clever modern scenes, such as the "History of a Glove" and the "Intermezzi," were mystical and allegorical. Among these are the famous "A Life" (1882); "Eve and the Future" (1880); above all, "Death" (1889), which is reminiscent at times of Dürer, but strikes many original notes; and the wonderful series "Brahms-Phantasie" (1894). In all these series the richness of his imagination is equaled only by a marvelous dexterity in combining graphic techniques. The middle period, from about 1883, was devoted chiefly to painting, in which he displayed no less originality of treatment. About 1883, for a villa at Steglitz, near Berlin, he began a series of about 50 decorative paintings, six of which are now in the National Gallery, Berlin, six in the Hamburg Kunsthalle. These were followed by a series of monumental paintings with polychrome or sculptured frames to continue or heighten the effect of the canvas. The principal of these are the "Judgment of Paris" (1886), Vienna Gallery; "L'Heure bleue" (1889); then, in fifteenth-century style, a "Crucifixion" (1890), Hanover Museum, and a "Pietà" (1893), Dresden Gallery; and "Christ on Olympus" (1897), Vienna, all of heroic size and showing marked psychological insight, but somewhat lacking in pictorial qualities. During later years Klinger was engaged upon mural paintings for the Leipzig Museum and University. From 1894 his chief activity was in polychromatic sculpture, in which his genius found its highest expression. Among his earlier subjects are "Salome" (1894) and "Cassandra" (1895), followed by studies of the nude, "Bathing" (1898) and "Amphitrite" (1899), and by

the statue of Beethoven (1902). In this statue the marble figure, nude to the knee (which is covered with an onyx mantle), leans forward in an elaborately decorated bronze chair. The chair, its upper arms decorated with white marble angel heads, is set on great masses of cloud, with a black marble eagle at the front. All these statues are in the Leipzig Museum, except "Amphitrite," which is in the National Gallery, Berlin. The chief of Klinger's more recent plastic achievements are a colossal marble group, "The Drama" (1904), Albertinum, Dresden; a "Crouching Diana," Jacobsen Museum, Copenhagen; a tragic bust of Nietzsche, at Weimar; a colossal bronze "Athlete"; a table service for the Leipzig City Hall; the Brahms monument for Hamburg; and designs for the Wagner monument in Leipzig and for a Brahms monument in Vienna. Klinger stands unrivaled among modern artists in the universality of his gifts and achievements, in which he may be compared to the great Florentines of the Renaissance. His originality is no less striking, and, though a modern among moderns, his work has met with general approval. He wrote *Malerei und Zeichnung* (3d ed., 1899). Gold medals were awarded him at Vienna and Dresden, and he became honorary member of the Munich Academy, member of the academies of Berlin, Dresden, and Stockholm, a commander of the Albrecht Order of Saxony, Knight of the Maximilian Order of Bavaria, etc.

Bibliography. The literature on Klinger is an extensive one. Good biographies have been written by Vogel (Leipzig, 1897), Stern (Berlin, 1898), Händcke (Strassburg, 1899), and Brieger-Wasservogel (Leipzig, 1902). Consult also: Treu, *Klinger als Bildhauer* (ib., 1900); Brille, *Klingers Beethoven* (Munich, 1903); Heyne, *Klinger im Rahmen der modernen Weltanschauung und Kunst* (Leipzig, 1907); Vogel, in *Kunst für Alle* (Munich, 1908-09); Rean, in *Gazette des Beaux-Arts* (Paris, 1908). For reproductions of his works, see Meissener, *Klingerwerk* (Munich, 1901); his drawings were published under the title *Zeichnungen von Max Klinger*, with an introduction by Max Singer (Leipzig, 1912).

KLINGS. The so-called "Klings," or "Kalingas," of the seaports of Malacca, Farther India, and certain parts of the East Indies, are said to be descendants of Hinduized Dravidians, especially of the Telinga. They are also known as Telings, Talaings, and Telingas.

KLIP'DAS, klip'däs', or **KLIPDACHS**, -däks' (Dutch, cliff badger). The South African coney, or rock badger. See HYRAX.

KLIPSPRINGER (Dutch, cliff springer). A small, agile, cliff-haunting South African antelope (*Oreotragus saltator*). It stands about 22 inches high and is olive-hued above and whitish on the abdomen and inside of the legs and tail. Its hairs are peculiarly stiff and brittle. Its ears are very large, roundish, and furry; and between them, on the head of the male, rise two short spike horns, curving gently forward. They haunt rocky hills, go about in pairs, and leap from ledge to ledge with amazing agility. It is the only African antelope which has attempted to take the place of the sheep, goats, and chamois of the northern hemisphere, and has become somewhat specialized in consequence. The tenderness of their flesh has led to their disappearance from most of Cape Colony. This antelope is known in Swaziland

as ikoka and elsewhere by various tribal names. Closely related races, such as *O. oreotragus aureus* and *O. o. schillingsi*, occur to the northward in equatorial Africa. See Plate of GAZELLES.

KLÖDEN, klö'den, KARL FRIEDRICH VON (1786-1856). A German educator, historian, and geographer. He was born at Berlin and got his education with difficulty while he was working with a gold-mith learning engraving, and giving lessons. In 1817 he was made director of the normal school at Potsdam and seven years afterward of a commercial school in Berlin. His most important work was geographical; besides his maps of Europe, mention should be made of *Grundlinien zu einer neuen Theorie der Erdgestaltung* (1824) and *Landeskunde von Palästina* (1816). His historical works include: *Ueber die Entstehung, das Alter und die früheste Geschichte der Städte Berlin und Kolln* (1839), *Lebens- und Regierungsgeschichte Friedrich Wilhelms III.* (1840); *Die Quitzows und ihre Zeit* (3d ed., 1889). Consult his *Jugend-erinnerungen Karl Friedrichs von Kloden* (Leipzig, 1874).

KLONDIKE. A region in the Canadian Territory of Yukon, lying chiefly to the east of the Yukon River, where it receives the Klondike Creek, near the middle of the Alaskan boundary line. The mining district includes the basins of the Klondike, Indian, and McQuestion rivers, about 800 square miles in area. It was on Bonanza Creek, a tributary of the Klondike, that a prospecting miner, G. W. Cormack, discovered rich gold deposits, Aug. 16, 1896. The following year saw an almost unprecedented rush of gold miners, and the Klondike was converted from a barren waste to a populous and lively mining district. The exhaustion of the bonanza placers has been followed by the installation of modern mining plants, which now annually produce gold to the value of \$5,000,000 or more. The climate is typically continental—very hot in the short summer and extremely cold during the long winter, the mean temperatures being -20° F in December, and 60° F in July. Facilities for communication with the coast were at first very poor, but a railroad line was built from Skagway to White Horse, at the headwaters of the Yukon, whence travel is easy to Dawson, the capital of the Klondike, by frequent steamboats from May to September and by stage in winter. Consult: L. A. Coolidge, *Klondike and the Yukon Country: A Description of our Alaskan Land of Gold from Scientific Sources* (Philadelphia, 1897); Lynch, *Three Years in the Klondike* (New York, 1904); McLain, *Alaska and the Klondike* (ib., 1905); W. S. Mason, *Frozen Northland: Life with the Eskimo in his Own Country* (Cincinnati, 1910); A. W. Greely, *Handbook of Alaska* (New York, 1914). See ALASKA; YUKON GOLD FIELDS.

KLONOWICZ, klō-nō'vich, SEBASTIAN (1545-1602). A Polish satirist, also called by the Latin name Acernus. He was born of middle-class parents at Sulmierzyce and studied at the University of Cracow. He lived at Lublin, where he was an official in the Jewish community. His wife was a drunken wanton, who brought his fortunes so low that he was forced to live his last years on the charity of the Jesuits, whom he had previously bitterly assailed. Besides these attacks in Latin, *Equitis Poloni in Jesuitas Actio Prima*, he wrote a poem called *Victoria Deorum*, in which he protests

against the oppression of the poor by the rich, and the famous *Roxolania*, a satire on Russia, which might be ranked as a great national poem were it in the vernacular. His Latin poems were filled with Latinized Polish words, and on the other hand his Polish poems are often made unintelligible by the use of Latinisms and Hellenisms literally translated. The Polish poems include *Worek Judaszów* (Judas's Knapsack), in which he portrays the venality and avarice of the time; and *Flus*, a sketch of a fortnight's travel, with mythology and digressions rivaling Ausonius. Consult Mierzynski, *De Vita, Moribus, Scriptisque Latinis S. F. Acerni* (Berlin, 1857). Klonowicz's death in the Jesuit hospital of Lublin was made the theme of one of the most beautiful poems of Kondratowicz (q.v.).

KLOOTZ, JEAN. See CLOOTS, JEAN BAPTISTE DU VAL-DE-GRACE, BARON.

KLOPP, klōp, ONNO (1822-1903). A German historian, born in Leer, East Friesland. He studied at Bonn, Berlin, and Göttingen (1841-45); taught in the Osnabrück Gymnasium (1845-58), and became the confidential friend of King George V of Hanover, whose exile in 1866 he shared. His dislike of the Prussians was intensified after he turned Roman Catholic (1873), and the Catholic spirit pervades his *Geschichte Ostfrieslands* (1854-58); *König Friedrich II. von Preussen und die deutsche Nation* (1860, 2d ed, 1867); *Der König Friedrich II. von Preussen und seine Politik* and *Tilly im Dreissigjährigen Kriege* (1861); *Der Fall des Hauses Stuart* (14 vols., 1875-83), one of his best works, *Das Jahr 1683* (1882); *König Georg V.* (1878); *Der Dreissigjährige Krieg bis zum Tode Gustav Adolfs, 1632* (1891-96). Klopp also edited the correspondence of Emperor Leopold I with Father Marco d'Aviano (1888).

KLOPSCH, klōpsh, LOUIS (1852-1910). An American publisher and humanitarian, born in Germany. He was proprietor of the *New York Daily Reporter* in 1877-90, of the *Pictorial Associated Press* in 1884-90, and after 1892 of the *Christian Herald*, a connection through which he raised more than \$3,500,000 for international charities. The money was used in relieving sufferers from famine in Russia (1892), India (1897-98, 1900), Cuba (1898), China (1901, 1907), Finland and Sweden (1903), and Japan (1906).

KLOPSTOCK, klōp'stōk, FRIEDRICH GOTTLIEB (1724-1803). A German poet of great fame and popularity in the latter half of the eighteenth century, now hardly read or readable. He was one of the pioneers of the classic age. He was born in Quedlinburg, July 2, 1724, and died in Hamburg, March 14, 1803. Educated at Quedlinburg and the famous school at Schulpforta, Klopstock went in 1745 to Jena to study theology, but left in 1746 for Leipzig, where he made the acquaintance of Gellert (q.v.). Going then as private tutor to Langensalza, in 1748 he published the first three cantos of *Der Messias*, intended to be a Miltonic epic, but really only a series of lyric outbursts, and so won the attention of Bodmer (q.v.), the translator of Milton, who invited him in 1750 to Zurich. Thence he went in 1751 to Copenhagen by invitation of the Danish King, who gave him a yearly pension of 400 thalers. Political changes brought him back to Germany in 1771, and he remained there, chiefly in Hamburg, where he finished the *Messias* in 1773, till his death.

Klopstock wrote also odes, many of which are admirable, an artificial Art of Poetry (*Die Gelehrtenrepublik*, 1744; *Bardiege*, antiquated in patriotism and obsolete in mythology, interspersed with unactable dramas (*Hermannsschlacht*, 1769; *Hermann und die Fursten*, 1784; and *Hermanns Tod*, 1787), all sentimental and overblown. Though Klopstock's contributions to German thought and poetry were not small, his enrichment of the poetic vocabulary, his attention to prosody, and his making poetry the vehicle of genuine feeling were of greater service to the poets that immediately followed him. He banished rhyme and tried to introduce Germanic mythology into German literature. Klopstock's Works were first collected in 12 volumes (Leipzig, 1798-1817). One of the best editions is that edited by Muncker (4 vols., 1887). There is an English translation of the *Messias* that does fair justice to the nebulous earnestness of the original. Consult: Muncker, *Friedrich Gottlieb Klopstock, Geschichte seines Lebens und seiner Schriften* (2d ed., Berlin, 1900). K. Heinemann, *Klopstocks Leben und Werke* (1890); Bailly, *Étude sur la vie et les œuvres de Klopstock* (1888); Lyon, *Ueber Klopstocks Verhältnis zu Goethe* (Leipzig, 1882); Lappenberg, *Briefe von und an Klopstock* (Brunswick, 1867); E. Schmidt, *Charakteristiken*, vol. i (1886); Jenny, *Miltons Einfluss auf die deutsche Literatur* (1890); Häbler, *Milton und Klopstock* (1893).

KLOSS, klòs, GEORG BURKHARD FRANZ (1787-1854). A German historian of Freemasonry. He was born in Frankfort, studied medicine in Göttingen and Heidelberg, and practiced medicine in his native city. His works, based on his unusually complete Masonic library and quite fundamental to the history of the order, include: *Bibliographie der Freimaurerei* (1844); *Freimaurerei in ihrer wahren Bedeutung* (2d ed., 1855); *Geschichte der Freimaurerei in England, Irland und Schottland* (1848); *Geschichte der Freimaurerei in Frankreich* (1852-53). After his death his valuable Masonic library passed into the possession of Prince Friedrich of the Netherlands, who opened it in The Hague to all Freemasons.

KLOSTERMANN, klòs'tér-mán, ERICH (1870-). A German New Testament scholar, born in Kiel, the son of Heinrich August Klostermann. He studied at the universities of Neuchâtel, Leipzig, Kiel, Berlin, and Erlangen, and in 1901 became docent at Kiel, where he was made titular professor in 1905 and whence he went in 1911 to Strassburg as professor of New Testament. His early training was in classical philology, and an important part of his work was editing (especially in *Texte und Untersuchungen zur Geschichte der altchristlichen Literatur*) the text of Origen (1899 et seq.) and Eusebius (1902 et seq.). He also published: *Jesu Stellung zum alten Testament* (1904); *Markus* (1907); *Matthäus* (1909); *Die neuesten Angriffe an der Geschichtlichkeit Jesu* (1912).

KLOSTERMANN, HEINRICH AUGUST (1837-). A German Lutheran theologian, born at Steinhude and educated at Erlangen and Berlin. He was repetent and docent of theology at Göttingen until 1868, when he accepted the chair of Old Testament exegesis at Kiel. Among his works are: *Vindiciae L. v. 1868*, *Das Markusevangelium* (1867); *Die alttestamentlichen Theologie Israels Probleme*

im Aposteltest neu erortert (1883); *Zur Theorie der biblischen Weissagung und zur Charakteristik des Hebraerbiefes* (1889); *Der Pentateuch* (1893); *Geschichte des Volkes Israel* (1896); *Der Pentateuch, neue Folge* (1907).

KLOSTERNEUBURG, klòs'tér-noi'bùrk. A town of Lower Austria, on the right bank of the Danube, 6 miles west-northwest of Vienna (Map: Austria, E 2). It is the seat of the oldest Augustinian monastery in Austria, founded in 1108. The palatial abbey buildings, erected (1730-50) by Charles VI, contain a library of more than 80,000 volumes (900 incunabula). In the museum is the Austrian archducal hat used in the ceremony of swearing allegiance. The old German monastery church of St. Maria (1136) contains a number of fine paintings and a magnificent high altar. Pop., 1900, 11,595, 1910, 14,787. It has a vintner's training school, contains several charitable institutions of Vienna, and is an outpost of the metropolis. It manufactures wine, lacquer, varnish, and electrical apparatus. The town was built by Charlemagne on the site of a Roman castle and made a city by Duke Albert I (1298) under the name of Neuburg-Klosterhollen.

KLOSTER ZEVEN, klòs'tér tsü'ven. See WILLIAM AUGUSTUS, DUKE OF CUMBERLAND.

KLOTZ, klòts, CHRISTIAN ADOLF (1738-71). A German Latinist and literary critic, born at Bischofswerda. He was educated at Halle, Leipzig, and Jena, qualified as docent and became professor at Jena when only 24 years old. A year afterward (1763) he was chosen professor of philosophy at C. . . and in 1765 became professor of oratory. . . . He is remembered chiefly on account of his quarrel with Pieter Burmann the Younger and of his criticism of Lessing's *Laokoon*, in the brochure *Ueber den Nutzen und Gebrauch der alten geschnittenen Steine* (1768), which Lessing answered in his *Briefe antiquarischen Inhalts* (1768-69). Klotz had a remarkably pure Latin style, which is best shown in his satiric works, *Mores Eruditorum*, in his *Opuscula Latina* (1760), and in his journal, the *Acta Literaria* (1764-72). His other works on classical subjects include editions of Tyrtæus (1764) and of Vida's *De Arte Poetica* (1776), *Opuscula Philologica et Oratoria* (1772), *Vindiciae Horatianæ* (1764), and *Lectiones Venusinæ* (1771). Consult Hausen, *Leben und Charakter Herrn Klotz* (Halle, 1772); Hagen, *Briefe deutscher Gelehrten an Klotz* (1773); *Sandys, A History of Classical Scholarship*, vol. iii (Cambridge, 1908).

KLOTZ, KLOZ, or KLOTZ, MATTHIAS (1653-1743). A well-known Bavarian violin maker and head of the celebrated family of violin makers of that name. He was born at Mittenwald and was probably a pupil of Jakob Stainer (q.v.). Although he was the maker of several very excellent specimens, he did not, as a rule, exercise sufficient skill or care in the selection of his wood. His varnish is considered by modern experts to have been of good quality, but this, like the undoubted beauty of his model, was more than discounted by his negligence in the respect above mentioned.—His two sons, GEORG (born in 1687) and SEBASTIAN (born in 1696), were also makers of violins and greatly surpassed their father in every way, although the work of Georg is noticeable for the same fault that marred that of his father. Sebastian was the best workman of the entire family. He marked his violins with a secret mark only dis-

tinguishable, as a rule, by connoisseurs. It consists of the initials S. K. marked in some obscure part of the instrument.

KLOTZ, OTTO JULIUS (1852-). A Canadian civil engineer and astronomer. He was born at Preston, Ontario, and was educated at Toronto University and at the University of Michigan. In 1879 he entered the service of the Dominion government at Ottawa in connection with the topographical surveys branch of the Department of the Interior. Besides extended surveys over the Northwest prairies, he undertook in 1884 an exploration along the Saskatchewan and Nelson rivers to Hudson Bay, making magnetic observations. In 1885 he began transcontinental longitude determinations at Seattle, Wash., and was largely instrumental in establishing geographic points of reference in British Columbia and the Northwest Provinces. The delimitation of the 40-mile railway belt granted by British Columbia to the Dominion was made on the basis of his survey in 1886, and he determined the heights of the principal mountain peaks along the railway. In 1892-94 he was engaged in transatlantic longitude work and the Alaska boundary survey and later determined the longitude of the Pacific islands between Vancouver and Brisbane, Australia. In 1908 he was appointed assistant chief astronomer in the Department of the Interior and was elected president of the Royal Astronomical Society of Canada. He became a member of several American and foreign scientific societies. He published many papers on subjects relating to terrestrial magnetism, geodesy, and astronomy.

KLOTZ, REINHOLD (1807-70). A German classical scholar, born at Stollberg. He was educated at the University of Leipzig, where he became assistant professor in 1832 and full professor in 1849, after Hermann's death. From 1831 to 1856 he was one of the editors of Jahn's *Jahrbuch für Philologie*. In Greek philology he made a name by his edition of Clement of Alexandria (1831-34), his completion of Pflugk's *Euripides* (1841-60), and his revision of Devarius' *Liber de Græcæ Linguae Particulis* (1835-42). Even more important was his work in Latin, including a complete edition of Cicero (1851-56; 2d ed., 1863-71; with *Index Ciceronianus*, 1872), one of Nepos (1846), and a valuable text of Terence (1838-40, supplemented by a separate edition of the *Andria* in 1865), manuals of Latin literature (1846; never finished) and of Latin style (1874), and an abridged Latin lexicon (1847-54; later eds.) prepared with the aid of Lübker and Hudemann. Consult the notice in Jahn's *Jahrbuch*, pp. 154-163 (1871).

KLÜBER, KLU'BER, JOHANN LUDWIG (1762-1837). A German publicist, born at Tann, near Fulda. He was professor of law at the universities of Erlangen (1786-1804) and Heidelberg (1807-08), held high positions in the government service at Karlsruhe (1804-07 and 1808-17), and was in Vienna during the Congress of 1814-15, collecting the *Akten des Wiener Kongresses in den Jahren 1814 und 1815* (8 vols., 1815-19), of which the most important portions were reprinted separately under the title *Quellensammlung zu dem öffentlichen Rechte des Deutschen Bundes* (1830). In 1817 he entered the Prussian service and was appointed Privy Councillor in the Ministry of Foreign Affairs under Hardenberg, whom he

accompanied to the Congress at Aix-la-Chapelle (1818), and he took an important part in other political negotiations at Frankfurt and St. Petersburg. When, at the appearance of the second edition of his *Öffentliches Recht des Deutschen Bundes und der Bundesstaaten*, in 1822, book and author became the objects of political vilification, he resigned his post and retired to Frankfurt. The more important of his other writings are: *Le droit des gens moderne de l'Europe* (1819; 2d ed., 1874); *Abhandlungen und Beobachtungen für Geschichtskunde, Staats- und Rechtswissenschaften* (1830-34); *Pragmatische Geschichte der nationalen und politischen Wiedergeburt Griechenlands* (1835).

KLUCK, KLUK, ALEXANDER VON (1846-). A German soldier, born in Münster. He entered the army in 1865, saw active service and became a lieutenant in 1866, was in the war with France and was twice wounded at Metz. He was promoted major in 1887 and in the next year was commander of the preliminary school for officers at Neubreisach, having held a similar post at Annaburg in 1884. In 1899, as major general, he commanded the 23d Brigade of Infantry, and in 1902, as lieutenant general, the Thirty-seventh Division. In 1906 he was made a general of infantry and was put in command of the Fifth Army Corps, from which he was transferred to the First in 1907. In 1913 he was appointed inspector general of the Eighth Army Corps, and he commanded one of the three main bodies of German troops in France in 1914, taking part in the battles of the Marne and the Aisne. See WAR IN EUROPE.

KLUCKHOHN, KLUK'hön, AUGUST (1832-93). A German historian. He was born at Bavenhausen and studied at Heidelberg and Göttingen. In 1858 he went to Munich to become one of the editors of Sybel's *Historische Zeitschrift*. In 1865 he was appointed professor of history at the Polytechnic School in Munich, became honorary professor at the University, and in 1883 he went to the University of Göttingen. His works include: *Geschichte des Gottesfriedens* (1857); *Wilhelm III., Herzog von Bayern-München* (1861); *Ludwig der Reiche, Herzog von Bayern-Landschut* (1865); *Friedrich der Fromme, Kurfürst von der Pfalz* (1870-79); *Luise, Königin von Preussen* (1876); *Blücher* (1879); *Ueber L. von Westenrieders Leben und Schriften* (1890); and the posthumous *Vorträge und Aufsätze* (1894).

KLUGE, KLU'ge, FRIEDRICH (1856-). A German scholar, born at Cologne. He studied at Leipzig, Strassburg, and Freiburg; began teaching at Strassburg in 1880; was made assistant professor at Jena in 1884; became full professor of English and Germanic philology there in 1886; and then in 1893 went to Freiburg as full professor of the German languages and literature. He became editor of the *Zeitschrift für Wortforschung*, a member of the Saxon Royal Academy of Sciences, honorary member of the Royal Academy of Ghent, and member of the academies at Munich and Heidelberg. Besides his very valuable *Etymologisches Wörterbuch der deutschen Sprache* (7th ed., 1910), he wrote *Stammbildungslehre der altgermanischen Dialekte* (2d ed., 1899); *Von Luther bis Lessing, sprachgeschichtlich Aufsätze* (4th ed., 1904); *Angelsächsisches Lesebuch* (3d ed., 1902); *Deutsche Studentensprache* (1895). With Lutz he published *English Etymology* (1898), and to Paul's *Grundriss der germa-*

nischen Philologie he contributed "Vorgeschichte der germanischen Sprachen" and "Geschichte der englischen Sprache" (2d ed., 1899). Among his other important works are *Rotwelsch Quellen und Wortschatz der Gaunersprache* (1901); *Mittelenglisches Lesebuch* (1904; 2d ed., 1912); *Unser Deutsch* (2d ed., 1910); *Seemannssprache* (1911); *Wortforschung und Wortgeschichte* (1912); *Vorgeschichte der alt-germanische Sprache* (1913).

KNABL, knä'b'l, JOSEPH (1819-81). An Austrian sculptor, born at Fliess, Tirol. The son of a poor peasant, he tended cattle when a boy, was first instructed by the wood carver Franz Renn at Imst, and afterward in Munich by Entres and Anselm Sickinger. Deeply interested in mediæval German wood sculpture, the revival of which he made his chief aim, he studied its best specimens in Bavaria, Tirol, and on the Rhine, and afterward produced in Munich a series of sterling works in wood and marble, the most remarkable of which is the "Coronation of the Virgin," on the high altar in the Frauenkirche. He was a member of the academy, at which a special chair was created for him in 1863, and for many years was director of Meyer's Institute for Ecclesiastical Art.

KNACKFUSS, knäk'fuss, HERMANN (1848-). A German painter and writer on art. He was born at Wißen (Rhenish Prussia) and studied at the Düsseldorf Academy and later under Bendemann and Gebhardt. He is best known as the editor of the *Kunstlermonographien*, a popular illustrated series of monographs of the great artists, published at Bielefeld, and as the author of several of these monographs, viz., Holbein the Younger (4th ed., 1902), Velazquez (6th ed., 1906), Rubens (9th ed., 1909), Rembrandt (11th ed., 1909), Dürer (10th ed., 1909), Titian (1910), Van Dyck (5th ed., 1910), Raphael (12th ed., 1912), Michelangelo (11th ed., 1912), Menzel (9th ed., 1912), Murillo (new ed., 1913), Frans Hals (new ed., 1913). He also wrote a *History of German Art* (1888) and collaborated with M. G. Zimmermann in a *Universal History of Art* (Bielefeld, 1900). His best-known paintings are the mural decorations of the High School at Wohrlau, the Ruhmeshalle, Berlin, and the Court House of Cassel; and the large historical composition, "Entry of the German Emperor into Jerusalem" (1902). Knackfuss was appointed professor in the Academy of Arts in Cassel in 1880 and lecturer on the history of art in 1890.

KNAPP, knäp, ALBERT (1798-1864). A German poet, author of many of the best modern German hymns. He studied theology and after holding various positions in the Protestant church became in 1836 the principal clergyman in Stuttgart, where he remained until his death. As a poet, Knapp worked chiefly in the religious field and did much to revive that long-neglected branch of poetry. Many of his hymns are to be found in the *Christoterpe*, a periodical edited by him from 1833 to 1853. His other works include: *Christliche Gedichte* (1829); *Gedichte, neueste Folge* (1843); the cycles, *Hohenstaufen* (1839) and *Bilder der Vorwelt* (1862). To hymnology Knapp contributed his *Evangelischer Liederschatz für Kirche und Haus* (1837), a valuable collection of Christian hymns of all ages, to which his *Christenlieder* (1841) forms a splendid supplement. Consult Karl Gerok, *Albert Knapp als*

schwäbischer Dichter (Stuttgart, 1881), and Martin Knapp, *A. Knapp als Dichter und Schriftsteller* (Tübingen, 1913).

KNAPP, năp, CHARLES (1868-). An American classical scholar, born in New York City. He graduated in 1887 from Columbia University, where he was afterward for three years prize fellow in classical philology, receiving the degree of Ph.D. in 1890, and then tutorial fellow (1890-91). In 1891 he became instructor in classical philology at Barnard College, Columbia, in 1902 adjunct professor, and in 1906 professor. He contributed, especially on Roman life and Latin literature, to the *American Journal of Philology*, the *Classical Journal*, *Classical Philology*, the *Classical Review*, and the *Classical Weekly* (of which he became managing editor in 1906). In 1906 also he was elected secretary treasurer of the Classical Association of the Atlantic States. He edited *Stories from Aulus Gellius* (1894); *Selections from Viri Romæ* (1896), with R. Arrow-smith; and, with introduction, notes, and index, Vergil's *Æneid*, i-vi, with selections from books vii-xii (1901). For the second edition of the NEW INTERNATIONAL ENCYCLOPEDIA he had charge of the department of classical philology.

KNAPP, knäp, GEORG FRIEDRICH (1842-). A German economist and statistician, born at Giessen. He was educated at Munich, Berlin, and Göttingen. At the age of 25 he became head of the statistical bureau of Leipzig and two years later (1869) became assistant professor of economics at the University of Leipzig. In 1874 he went to Strassburg as professor of political economy. His works are mostly on the subject of population and on the history of agriculture. *Ueber die Ermittlung der Sterblichkeit* (1860); *Theorie des Bevölkerungswechsels* (1874); *Die Bauernbefreiung und der Ursprung der Landarbeiter in den ältern Teilen Preussens* (1887); *Die Landarbeiter in Knechtschaft und Freiheit* (1891); *Grundherrschaft und Rittergut* (1897); *Staatliche Theorie des Geldes* (1905).

KNAPP, (JAKOB) HERMAN (1832-1911). A German-American oculist and aurist, born in Dauborn, Prussia. He graduated at the University of Giessen in 1854; studied in Berlin, Paris, and London; was professor of ophthalmology in the University of Heidelberg from 1864 to 1868, emigrated to New York in the latter year and in 1869 founded the New York Ophthalmic and Aural Institute. He was professor of ophthalmology in the New York University Medical College from 1882 to 1888, when he accepted the corresponding chair in the College of Physicians and Surgeons (Columbia). Dr. Knapp was made professor emeritus in 1902. He wrote a number of excellent monographs on the diseases of the ear and eye, established the *Archives of Ophthalmology and Otolaryngology* in 1869, and published: *Die intraokularen Geschwülste* (1868); *Cocaine and its Uses in Ophthalmic and General Surgery* (1885); *Investigation on Fermentation, Putrefaction, and Suppuration* (1886); *Cataract Extraction without Iridectomy* (1887).

KNAPP, năp, MARTIN AUGUSTINE (1843-). An American commerce specialist, born at Spofford, Onondaga Co., N. Y. He graduated at Wesleyan University in 1868, was admitted to the New York bar in 1869, and in 1870 began the practice of the law at Syracuse, N. Y. From 1877 to 1883 he was city attorney of

Syracuse. He made a particular study of corporation law. From 1891 to 1910 he was a member of the Interstate Commerce Commission, of which he was chairman after 1898. He resigned in 1910 when appointed additional circuit judge by President Taft, who assigned him for five years to the United States Commerce Court as presiding judge. Upon the dissolution of this court, in 1913, he was assigned to the Circuit Court of Appeals of the fourth judicial circuit. Under the original and the amended Erdman Act Knapp had served as mediator in numerous railway labor disputes, and when the Erdman Act was superseded in 1913 by the Newlands Act, he was appointed by President Wilson to the Board of Mediation and Conciliation created thereby. For the year 1910-11 he was a vice president of the American Statistical Association. He wrote a monograph on *Railroad Pooling* (1896), No. 179 of the *Publications of the American Academy of Political and Social Science*, and *National Regulation of Railroads* (1905).

KNAPP, SAMUEL LORENZO (1784-1838). An American lawyer and author. He was born in Newburyport, Mass., graduated at Dartmouth College in 1804, was admitted to the bar in Massachusetts, served as colonel in the coast-guard militia in the War of 1812, and later became a journalist in Boston. He edited the *Boston Gazette* and the *Boston Monthly Magazine* and in 1826 founded the *National Republican*. The *Republican* not proving a success, he resumed the practice of law in 1828 in New York. His writings include: *Travels in North America, by Ali Bey* (1818); *Memoirs of General Lafayette* (1824); *The Genius of Freemasonry* (1828); *American Biography* (1833); *Life of Aaron Burr* (1835); *Life of Andrew Jackson* (1835); *The Bachelor, and Other Tales* (1836).

KNAPP, WILLIAM IRELAND (1835-1908). An American writer, born at Greenport, L. I. He studied at New York University and graduated at Madison, now Colgate, University in 1860. From 1860 to 1865 he was professor of modern languages at Madison, and during the two years immediately following taught the same subjects at Vassar. He spent the greater part of the next 11 years in Spain, where he collected a valuable library. Upon his return (1879) he accepted the Street professorship of modern languages at Yale, in 1892 became professor at the University of Chicago, and after 1895 lived chiefly in England and France. His works include: *Obras Pictas de Don Diego Hurtado de Mendoza* (2 vols., 1876-77); *Grammar of the Modern Spanish Language* (1882); *Life, Writings, and Correspondence of George Borrow* (2 vols., 1899); *Borrow's Lavengro and the Romany Rye* (1900); *Pascual López, by Mme. Pardo Bazán* (1905).

KNAPSACK, năp'săk (Dutch *knapzak*, from *knappen*, to eat + *zak*, sack). The bag or case in which the soldier carries his kit when on the march, usually worn suspended between the shoulders. The new United States model haversack and new pack carrier (1914) have replaced the old knapsack and haversack in the United States army. The new devices are carried as a back pack, however. See KIT; HAVERSACK.

KNAUS, knous, LUDWIG (1829-1910). A German genre painter of the younger Düsseldorf school. He was born at Wiesbaden and studied from 1845 to 1852 under Sohn and

Schadow in Düsseldorf. His early works, like "The Gamblers," in the Düsseldorf Gallery, are in the manner of that school, being dark and heavy in color. This deficiency was remedied by study at Paris, whither he went in 1852 and enrolled as a pupil of Couture. In 1853 his "Morning after the Kermess" received the second gold medal of the Salon and made him a celebrated painter. Except for a year's study in Italy, he remained in Paris until 1860. His chief works of this period include "The Golden Wedding," "The Baptism," and "The Promenade," purchased for the Luxembourg. From 1861 to 1866 he practiced at Berlin, producing such works as "Boys Playing Cards," "Looking for a Bride" (Wiesbaden Museum), and "His Highness on his Travels." The next eight years of his life saw the production of much of his best work, including "The Children's Festival" (National Gallery, Berlin), "In Great Distress," and "The Village Prince." From 1874 to 1883 he was professor at the Academy of Berlin, continuing to reside in that city until his death. His color was at this time improved by the study of Dutch masters. Among the most important works of his last period were: "The Holy Family" and "The Road to Ruin," both painted in 1876 and now in the Metropolitan Museum of Art, New York, "Behind the Curtain" (1880), Dresden Gallery; "The Rag Baby" (1880) and "A Village Festival" (1881), both in the Vanderbilt collection, Metropolitan Museum, New York; and "A Duel." During his last period Knaus also painted a series of "Idyls," with nudes in a rather classical style, of which an important example is in the Wiesbaden Museum. The most famous examples of his portraits, which are genre in character, are those of the scientist Helmholtz and the historian Mommsen, both in the National Gallery, Berlin. The art of Knaus is best represented in the public collections of Germany and in some of the United States—the Metropolitan Museum, New York, possessing eight examples; the Walters collection, Baltimore, two. Among his many distinctions were the great gold medal of the Berlin Exhibition of 1861 and the grand medal of honor at the Paris Exposition of 1867. He was a member of the Berlin, Munich, and many other academies, an Officer of the Legion of Honor and a Knight of the Prussian Order Pour le Mérite.

As admirable illustrations of popular life, the paintings of Knaus are pleasing to the general public, but they are no less so to connoisseurs by reason of their excellent color and sound drawing. He was the first to pass from mere illustration to genre pictures, which were at the same time excellent paintings and as such occupied an important position in the history of German painting. They abound in humor and excel particularly in the portrayal of childhood; but the figures are not always natural, the posing being sometimes obvious. Consult the chief authority on Knaus, Pietsch, who wrote a volume of the *Künstlermonographien* (Bielefeld, 1896), a comprehensive article in *Die Kunst unserer Zeit*, vol. xiii (Munich, 1902), and edited an album of his works published by the Berlin Photographic Society.

KNEBEL, knä'bel, KARL LUDWIG VON (1744-1834). A German poet and translator, born at the castle of Wallerstein, Bavaria. After studying law at the University of Halle, he served

for 10 years as an officer in the Prussian army and in 1774 became tutor to Prince Konstantin at Weimar and accompanied him and his brother on a journey to France. On this occasion he called upon Goethe at Frankfurt and thus first introduced him to the hereditary Prince Karl August. After the early death of his pupil he retired in 1779 with the rank of major at Karl August's court at Weimar and a pension for life, and henceforth lived in intimate association with that famous literary circle of which Goethe, Schiller, Herder, and Wieland were the guiding stars. In 1798 he married Luise Rudorff, chamber singer to the Duchess Amalie, retired to Ilmenau, and in 1805 removed to Jena. Although his own poems—*Hymnen*, *Elegien*, *Lebensblüten in Distichen*, and others—are to be commended for their classical purity of form, he is more especially remembered for his excellent translations of the *Elegiæ* of Propertius (1798), of the *De Rerum Natura* of Lucretius (1821), and of Alfieri's tragedy *Saul* (1829). His highly interesting correspondence with Goethe, *Briefwechsel mit Goethe*, was edited by Guhrauer (Leipzig, 1851). Consult C. F. Beauhieu-Marconnay, *Anna Amalia, Karl August und der Minister von Frisch* (Weimar, 1874), and Hugo von Knebel-Doberitz, *Karl Ludwig von Knebel* (ib., 1890).

KNEE, HOUSEMAID'S. See HOUSEMAID'S KNEE.

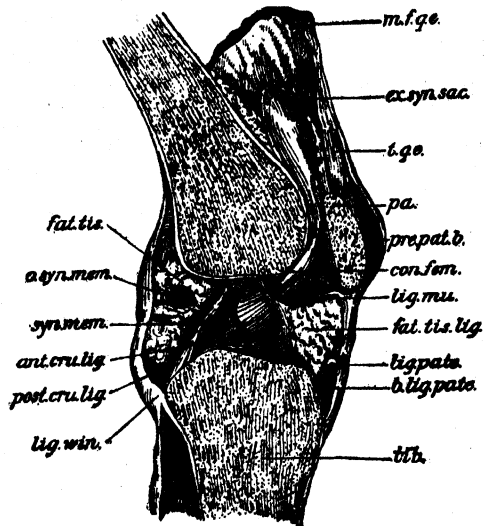
KNEE/CAP'. See PATELLA.

KNEE JERK, or PATELLAR REFLEX. The name given to the phenomenon resulting from striking lightly the tendon uniting the patella to the tibia. The knee jerk is elicited by having the patient cross the knees, relaxing the upper leg, and then with the finger tip or a special hammer striking the tendon named just below the kneecap. A slight involuntary kick results, in a person in normal condition. The knee jerk is increased in certain diseases, as hysteria, neurasthenia, spastic paraplegia, hemiplegia, etc. It is diminished or entirely absent in lead poisoning, locomotor ataxia, chronic alcoholism, etc. The nerves involved are the fourth lumbar pair; the peripheral nerve is the anterior crural. The muscles taking part in the sudden contraction are those constituting the quadriceps extensor femoris. This phenomenon is of great importance in the diagnosis of nervous diseases.

KNEE JOINT. The articulation between the femur or thigh bone above and the tibia or shin bone below. A third bone, the patella or kneecap—one of the sesamoid bones (see SESAMOID BONE) and not a true bone of the skeleton—also enters into the structure of this joint anteriorly. The articular surfaces of these bones are covered with cartilage, lined by a synovial membrane, which is the most extensive in the body, and connected together by ligaments, some of which lie external to the joint, while others occupy its interior.

The most important of the external ligaments are the anterior or ligamentum patellæ, which is in reality that portion of the quadriceps extensor cruris which is continued from the kneecap to the tubercle of the tibia; one internal and two external lateral ligaments; a posterior ligament; and a capsular ligament, which surrounds the joint in the intervals left by the preceding ligaments. The positions of these ligaments are sufficiently indicated by their names. Of the internal ligaments, the two cru-

cial, so called because they cross each other, are the most important. The external and internal semilunar cartilages are two crescentic plates of cartilage; the outer part of each is thick, the inner free border thin. Each cartilage covers nearly the outer two-thirds of the corresponding



VERTICAL SECTION OF THE RIGHT KNEE JOINT IN THE ANTERO-POSTERIOR DIRECTION.

m.f.q.e., muscular fibres of quadriceps extensor; ex.syn.sac., extension of synovial sac of knee upon femur; t.g.e., tendon of quadriceps extensor forming fibrous capsule of joint; pa., patella; pre.pat.b., prepatellar bursa; con.fem., condyle of femur inner; lig.mu., ligamentum mucosum; fat.tis.lig., fatty tissue between ligamentum patellæ and synovial sac; lig.pate., ligamentum patellæ; b.lig.pate., bursa beneath ligamentum patellæ; tib., tibia; fat.tis., fatty tissue; o.syn.mem., opening in synovial membrane behind crucial ligament leading into inner half of joint; syn.mem., synovial membrane reflected off crucial ligaments; ant.cru.lig., out end of anterior crucial ligament; post.cru.lig., posterior crucial ligament; lig.win., ligament of Winslow.

articular surface of the tibia and by its form deepens these surfaces for firmer articulation with the condyles of the femur.

The chief movements of this joint are those of a hinge joint, viz., flexion and extension; but it is also capable of slight rotatory motion when the knee is half-flexed. During flexion the articular surfaces of the tibia glide backward upon the condyles of the femur, while in extension they glide forward. The whole range of motion of this joint, from extreme flexion to extreme extension, is about 150 degrees. Judging from its articular surfaces, which have comparatively little adaptation for each other, it might be inferred that this was a weak and insecure joint; and yet it is very rarely dislocated.

KNEELAND, ne'land, ABNER (1774-1844). An American Deist. He was born at Gardner, Mass., April 6, 1774, and was first a Baptist preacher, then a Universalist, and finally a Deist. From 1821 to 1823 he edited a Universalist periodical in Philadelphia, in 1828 he edited the *Olive Branch* in New York, and in 1832 founded in Boston the *Investigator*, a weekly expositor of free thought. He was also for several years in Boston the instructor of a deistical society meeting in Julien Hall, where in 1830 William Lloyd Garrison, when elsewhere prohibited, delivered his lectures against slavery. In 1836 he was tried in Boston for blasphemy. He died Aug. 27, 1844. Among his publications were:

The Deist (1822); *Lectures on Universal Salvation* (1824); *A Translation of the New Testament* (1822); *A Review of the Evidences of Christianity* (1829).

KNEELAND, SAMUEL (1821-88). An American naturalist and physician, born in Boston, Mass. He graduated from Harvard University in 1840, from its medical school in 1843, and studied medicine two years in Paris. In 1845 he began the practice of medicine in Boston, lecturing also on anatomy in Harvard University. He became professor of zoology and physiology in Massachusetts Institute of Technology in 1866 and also its secretary. During the Civil War he served as army surgeon. Kneeland traveled extensively for the study of earthquakes and volcanic phenomena in Brazil, Iceland, the Hawaiian Islands, through the copper region around Lake Superior, etc. In 1851 he edited with an introduction Smith's *History of the Human Species* and from 1866 to 1869 edited the *Annual of Scientific Discovery*. He contributed largely to scientific periodicals and wrote numerous articles on zoological and medical subjects for the *American Cyclopædia* and the *New American Cyclopædia*. His book-form publications include: *Wonders of the Yosemite Valley and of California* (1871); *An American in Ireland* (1876); *Volcanoes and Earthquakes* (1888).

KNEELAND, STILLMAN FOSTER (1845-). An American lawyer, born at South Stukeley, Quebec Province, Canada. He studied at McGill University, Montreal, and at Union College (New York State), served in the Union army in the Civil War, and, admitted to the bar in 1869, practiced in New York City from 1872 till his retirement. He framed and in 1886 secured the passage of an act which abolished perpetual imprisonment for debt in New York State. In 1894 he was elected to the State Assembly and in 1896-98 was Judge Advocate General on the staff of Governor Black. Besides several legal treatises, he published *Law, Lawyers, and Lambs* (1910) and *Random Rhymes of a Busy Barrister* (1911).

KNEIPP, knip, SEBASTIAN (1821-97). A German priest, the inventor of a special kind of water cure. He was born in Stefansried, Bavaria, and began life as a weaver. His attention was turned to the study of medicine while preparing for the priesthood, and a trifling accident is said to have led to systematic experiments in his water-cure treatment, of which one feature is that patients are compelled to walk barefooted in the snow in winter and barefooted on the wet grass in summer. Sunshine, fresh air, water, and a definite object or routine activity at stated hours are the chief factors in the Kneipp treatment. In Wörishofen, Swabia, where Kneipp lived as a priest, many patients are treated after his methods. Societies bearing his name exist in different parts of the world. He wrote: *Meine Wasserkur* (1887; 69th ed., 1901; Eng. trans., London, 1891); *So sollt ihr leben* (1889; 25th ed., 1900); *Kinderpflege in gesunden und kranken Tagen* (1891; 12th ed., 1906); *Mein Testament* (1894; 15th ed., 1900); *Vorträge in Wörishofen* (1894-98). His collected works were published in Kempten (1898-99). Consult: Rhein, *Das Buch vom Pfarrer Kneipp* (Kempten, 1891); Verus, *Vater Kneipp, sein Leben und Wirken* (ib., 1897); *Das grosse Kneippbuch* (Milwaukee, 1904).

KNEISEL, knä'zel, FRANZ (1865-). A

German-American violinist, born in Rumania, of German parentage. He was educated in Bucharest and studied violin under Grün and Hellmesberger in Vienna. From the position of concert master in Bilse's orchestra, Berlin, he was called by Gericke in 1885 to become first violin of the Boston Symphony Orchestra. The following year he organized the famous Kneisel Quartet, which has become the best-known quartet in the United States and is a peer of any similar European organization. In 1903 he resigned from the Boston Symphony Orchestra and moved to New York, where he became head of the violin department of the Institute of Musical Art. With his quartet he made several European tours. In 1907 he acted as a member of the jury for the violin competition at the Paris Conservatory. Yale University conferred upon him the degree Mus D. in 1911.

KNELLER, nē'lēr, SIR GODFREY (1646-1723). A German portrait painter, who worked chiefly in England. He was born at Lübeck, Germany, Aug. 8, 1646, the son of a portrait painter named Kneller. He studied painting under Ferdinand Bol at Amsterdam, with occasional lessons from Rembrandt. With his brother Ferdinand, who was also a painter, he then went to Italy, studying at Rome and especially at Venice. On his return to Germany he painted with success at Nuremberg, Hamburg, and elsewhere, and in 1675 he went to England. He was given an opportunity to portray Charles II at the same sitting with Sir Peter Lely and at once won favor by his superior rapidity of execution and excellent likeness. Being handsome and witty, his success at court was assured. On the death of Lely, in 1680, he was made court painter. His sitters included the persons of rank and distinction of his day. He painted 14 reigning sovereigns, among whom were Louis XIV, Peter the Great, and the kings and queens of England from Charles II to George I. After having been knighted by William III in 1693 and made Baronet by George I in 1715, he died in London, Oct. 19, 1723, and was buried in Westminster Abbey. Modern criticism does not indorse the eulogies of Kneller's painting by Dryden, Addison, and other distinguished contemporaries. His art was modeled on that of Van Dyck; his canvases are smoothly painted, with much elegance and little character. His best-known works are the "Beauties" of Hampton Court, 12 ladies of William III's court, painted as a counterpiece to Lely's series for Charles II; and the "Kit-Cat Club," now in private possession in London. Kneller himself esteemed his portrait of Francis Couplet, a converted Chinese, his best work. Consult Ackermann, *Der Porträt-Maler Kneller im Verhältnis zur Kunstbildung seiner Zeit* (Lübeck, 1845), and *Dictionary of National Biography* vol. xxxi (London, 1892). See Plate of NEWTON, SIR ISAAC.

KNELLER HALL. The British army training college for bandmasters, instrumentalists, etc. The school was first instituted as a government institution in 1857, although part of the expenses was met by a tax of £10 per annum from each regiment in the service. Ten years later the government took over the entire responsibility. It is situated at Twickenham, near London, and was formerly the residence of Sir Godfrey Kneller.

KNESEBECK, knä'ze-bēk, KARL FRIEDRICH, BARON VON DEM (1768-1848). A Prussian gen-

eral, born at Karwe. He entered the army in 1782, distinguished himself in the campaigns of 1792 and 1794, rose rapidly to the rank of major on the general staff (1802), and at Auerstädt (1806) saved his King from capture. Later in the same year he served with the Russian allies and drew up the plan of the battle of Pultusk. After the Peace of Tilsit he lived in retirement until 1809, when he was sent to Bohemia on a diplomatic errand. Three years afterward he was sent to Russia to urge the Prussian policy of peace and after the failure of this mission was made adjutant general, in which post he exercised a potent and frequently unfortunate influence on the King, especially in his attempt to oust Blücher in 1815. In 1831 he succeeded Gneisenau in command of the army of observation on the Polish frontier. He was made field marshal on his retirement in 1847. He was a poet of some popularity and wrote a *Lob des Krieges* (1805), which was a favorite in his day. Consult Lehmann, *Knesebeck und Schön* (Leipzig, 1875).

KNIAZHNIN, knyāzh-nēn', YAKOV BORISOVICH (1742-91). A Russian dramatist, born in Pskov, member of the St. Petersburg Academy (1783). He was educated at home and in the University of St. Petersburg and published his first poems while still a student. He entered the army and rose to be adjutant general. His tragedy *Didon* (1769) was only an imitation of Metastasio and Lefranc de Pompignan, but it brought him under the notice of the Empress Catharine II, whom he afterward assisted in translation. Through his acquaintance with the poet Sumarokov, his future father-in-law, he was induced to leave military life and to devote himself to literature. His more noteworthy tragedies are: *Vladimir i Iaropolk* (1779); *Roslav* (1784); *Vladshah* (1786). In these, as in his comedies, he adhered too closely to French models. His *Vadim*, written in 1789, was not published for four years, because of some passages sufficiently original and patriotic to alarm the Empress Catharine, who caused it to be destroyed. Kniazhnin brought out a complete edition of his works (4 vols., 1787), and they have been frequently reprinted, notably in two volumes (1847-48).

KNIAZIEWICZ, knyā-zēv'ich, KARÓL (1762-1842). A Polish general, born in Courland, of noble family. He joined a corps of cadets at Warsaw and in 1778 entered the artillery of the Polish Republic. Decorated for bravery at Dubienka (1792), he distinguished himself at Chelm and Gorkov (1794) and in the defense of Warsaw and rose rapidly to the grade of major general. At the ill-fated battle of Maciejowice he was in command of the left wing, was captured, and not set free till the accession of Paul. Then he joined the French army, fought against Rome and Naples in the Polish legion, was made corps commander, and sent to Paris with the captured standards of the campaign. After Marengo he raised a new Polish legion, commanded it at Hohenlinden, but left the French service after the Peace of Luneville as soon as it became plain that Bonaparte intended to do nothing for Poland. He lived in retirement until 1812, then fought again for the King of Westphalia under Poniatowski at Smolensk, and showed himself a brilliant tactician by his masterly retreat from Yoronova. At Beresina he was so severely wounded that he had to leave the service. After the Peace of Paris he lived at

Dresden, but in 1822 his popularity among the Poles made him suspicious in the eyes of the Russian government, and he was imprisoned for eight months. He returned to Dresden, only to leave his retirement again in 1830 to plead for the cause of Poland in Paris, and remained there till his death.

KNIAZNIN, knē-āzh'nēn, FRANCISZEK DYONIZY (1750-1807). A Polish poet, born at Vitebsk. Upon the dissolution of the Order of the Jesuits, of which he was a member, in 1773, he became secretary to Prince Adam Czartoryski. Learned, upright, sociable, and witty, he spent his life in eulogizing, under classical names, in numerous odes his patron and that Prince's family. Besides making translations of Horace and Ossian, he wrote many dramas, of which *The Spartan Mother* and *The Gypsies* achieved great vogue. His works were published in seven volumes (Leipzig, 1835). With Karpinski (q.v.) and Naruszewicz (q.v.) he belongs to that group of sentimental Polish poets who sought the most artificial phraseology and forms for the expression of their feelings.

KNICKERBOCKER, nīk'ēr-bōk-ēr. A name used of residents of New York descended from the old Dutch settlers. It is sometimes extended to include old New Yorkers of other stock. Though Washington Irving made the names famous in his *History of New York*, the Knickerbockers were among the oldest Dutch families of the State. The name appears in public records as early as 1709.

KNICKERBOCKER'S HISTORY OF NEW YORK. An historical work by Washington Irving (1809). It is a burlesque on the early history of New York City, purporting to have been written by one Diedrich Knickerbocker, and gives an amusing account of the early Dutch citizens. It is said to have bitterly offended their descendants in Irving's day.

KNIFE. See CUTLERY.

KNIGGE, knīg'ge, ADOLF, BARON VON (1752-96). A German author, born at Bredenbeck, near Hanover. After having studied law at Göttingen, he became assessor at Cassel; but, owing to official and social dissensions, soon left that city and led a wandering life. He lived for short periods successively at Hanau, Frankfurt, Heidelberg, and Hanover until 1791, when he made his home in Bremen and was appointed provost. His connection there with the secret society of the Illuminati involved him in unpleasant complications, and after its suspension he published, under the pseudonym Philo, a pamphlet (1788) which attracted much attention. He is best known through his *Ueber den Umgang mit Menschen* (16th ed., 1878), a collection of rules and maxims for a happy and useful life, once widely read and showing great observation and worldly wisdom. All his plays and most of his numerous novels are now forgotten, and only *Der Roman meines Lebens* (1781-87), the comical romance *Die Reise nach Braunschweig* (1792; new reprint in Kürschner's *Deutsche Nationallitteratur*), and *Des seligen Eratars von Schafskopf hinterlassene Papiere* (1792) deserve to be saved from oblivion. Consult Goedeke, *Adolf Freiherr Knigge* (1844).

KNIGHT (AS. *cniht*, *cnyht*, *cneoht*, youth, hero, OHG. *kneht*, Ger. *Knecht*, boy, servant; probably connected ultimately with Lat. *genus*, Gk. *gēnos*, *genos*, Skt. *janas*, family, as well as with AS. *cyning*, Eng. *king*). Originally a man

at arms bound to the performance of certain duties. A knight was usually, if not always, in the early Middle Ages, necessarily soldier, landholder, and noble. In the armies he served on horseback; therefore in other languages the equivalent term is frequently indicative of this fact—French *chevalier*, German *Ritter*, Spanish *caballero*. He was bound to serve his lord for a fixed time each year, usually 40 days, but in the Kingdom of Jerusalem continuously. (See section on *Military Organizations* under FEUDALISM.) As a landholder he held a fief from his superior; the theoretical unit in the feudal system was a knight's fee, which meant the land sufficient for maintaining one knight. This came to be merely a unit of measure, and instances are common in which a man performed service for a fraction of a knight's fee, e.g., one-fifteenth or two-thirds. All knights were nobles, although all nobles were not necessarily knights. The institution of knighthood, as conferred by investiture and with certain oaths and ceremonies, arose gradually throughout Europe as an adjunct of the feudal system. The character of the knight, as it was finally developed, was at once military and religious. The defense and recovery of the holy sepulchre and the protection of pilgrims were objects to which, in the early times of the institution, he was often supposed to devote himself. Later a code of knightly etiquette was developed, of which the most prominent features were an exalted sense of class honor and a reverence for ladies amounting almost, in theory, to religious worship. Though this high sense of honor towards the members of one's class was by no means inconsistent with a contempt for, and often a total disregard of, the rights of the lower classes, knighthood at its best was an influence for the refinement of life in the Dark Ages.

The system of knight service, introduced into England by William the Conqueror, empowered the King, or even a superior lord who was a subject, to compel every holder of a knight's fee to become a member of the knightly order, his investiture being accounted proof that he possessed the requisite knightly arms and was sufficiently trained in their use. In England, in the time of Henry III, the institution seems to have been based on a property qualification, since all persons possessed of a certain yearly income were forced to be knighted under a penalty of a fine. The Statute of Knights of the first year of Edward II, regulating the causes that were to be held valid to excuse a man from knightly service, shows that in the fourteenth century the knightly office was not always eagerly coveted; yet its social dignity was very considerable, for even dukes, if not admitted into the order, were obliged to yield precedence to a knight in any royal pageant or public ceremony. In France, where knighthood reached its greatest perfection, statutes of the thirteenth century show that there was the same unwillingness to incur the burden of knighthood. After the long war between France and England (see HUNDRED YEARS' WAR) it became the practice for the sovereign in England to receive money compensations from subjects who were unwilling to receive knighthood, a system out of which grew a series of grievances, leading eventually to the total abolition of knight service in the reign of Charles II.

Knighthood, originally a military distinction, came, in the sixteenth century, to be occasionally

conferred on civilians as a reward for valuable services rendered to the crown or community. The first civil knight in England was Sir William Walworth, Lord Mayor of London, who won that distinction by slaying the rebel Wat Tyler in the presence of the King (1381). Since the abolition of knight service, knighthood has been conferred, without any regard to property, as a mark of the sovereign's esteem or as a reward for services of any kind, civil or military. For the ceremonies practiced in conferring knighthood at different periods, see CHIVALRY.

Knighthood could, theoretically, be conferred by any person of knightly condition; but the right to bestow it was early restricted to persons of rank and afterward to the sovereign or his representative as the commander of an army. In England the sovereign now bestows knighthood by a verbal declaration, accompanied with a simple ceremony of imposition of the sword, or by patent, when the persons knighted cannot conveniently come into the presence of royalty. The Lord Lieutenant of Ireland also occasionally, but rarely, exercises a delegated power of conferring knighthood. In England the orders of knighthood are the Garter, the Thistle, St. Patrick, the Bath, St. Michael and St. George, Star of India, Indian Empire, and Royal Victorian. Consult: Sir N. H. Nicholas, *History of the Orders of Knighthood of the British Empire* (4 vols., London, 1842); Gautier, *La chevalerie* (Paris, 1884); J. H. L. Archer, *Orders of Chivalry from the Original Statutes of the Various Orders of Knighthood* (London, 1887), contains a bibliography; Luchaire, *Manuel des institutions françaises* (Paris, 1892); Round, *Feudal England* (London, 1895); Baldwin, *Scutage and Knight Service in England* (Chicago, 1897); W. H. Schofield, "Chivalry in English Literature," in *Harvard Studies in Comparative Literature*, vol. ii (Cambridge, Mass., 1912). See (in addition to FEUDALISM and CHIVALRY) BACHELOR, BANNERET; TOURNAMENTS; and separate orders, such as TEMPLARS, KNIGHTS; HOSPITALERS; ETC.

KNIGHT, AUSTIN MELVIN (1854—). An American naval officer, born at Ware, Mass. He graduated from the United States Naval Academy in 1873 and rose to the ranks of captain in 1907 and rear admiral in 1911. He served at various stations, had charge of the ordnance proving ground at Annapolis in 1885–89, participated in the Cuban blockade and in the Porto Rico expedition during the war with Spain, was head of the department of seamanship at the Naval Academy from 1898 to 1901, and served as president of the special board on naval ordnance and president of the joint army and navy board on smokeless powders in 1904–07 and in 1909. Later he became commandant of the Narragansett Bay (R. I.) Naval Station and in 1913 also president of the Naval War College. He is author of *Modern Seamanship* (1901; 5th ed., 1910).

KNIGHT, CHARLES (1791–1873). An English author, born at Windsor, where his father was a bookseller. He was sent to school at Ealing, where he gained some knowledge of the classics, but he was educated mostly in his father's bookshop. When a young man, he set himself to educate the masses by raising the tone of popular literature. In conjunction with Hawke Locker he founded the *Plain Englishman*, a magazine of original and selected articles (1820–22); edited the *Guardian*, a liter-

ary and political miscellany (1820-22); and, with the encouragement of Macaulay and others, started *Knight's Quarterly Magazine* (1823-24). In 1825 Brougham established the Society for the Diffusion of Useful Knowledge. The idea originated with Knight, who was subsequently called in to take charge of the society's publications. For the rest of his life Knight wielded immense influence as a popular instructor. Among the works which he published or edited are the *Penny Magazine* (1832-45), which at one time enjoyed a circulation of nearly 200,000 copies weekly; *Penny Cyclopædia* (30 vols., 1833-44); *Library of Entertaining Knowledge*, the volume on the elephant (1831) being written by himself; *Pictorial History of England* (1837-44); *London Pictorially Illustrated* (6 vols., 1841-44); *Old England, a Pictorial Museum of National Antiquities* (2 vols., 1845); *Half Hours with the Best Authors* (4 vols., 1847-48); *The English Cyclopædia* (22 vols., 1854-61); *Pictorial Shakespeare* (8 vols., 1838-41); *Life of Cæton* (1844); *Knowledge is Power* (1855); and, above all, the *Popular History of England* (1856-62). Knight died at Addlestone, March 9, 1873. Consult his autobiography, entitled *Passages of a Working Life during Half a Century* (3 vols., London, 1864-65).

KNIGHT, EDWARD HENRY (1824-83). An American mechanical expert. He was born in London, England, studied surgery, engraving, mechanics, and civil engineering, and came to the United States in 1845. He settled in Cincinnati, where he became a patent lawyer. In 1863 he accepted a position in the government patent office in Washington. He was a member of the international juries at the World's Fairs in Philadelphia and Atlanta, was United States Commissioner to the World's Fair in Paris in 1875, and was made Chevalier of the Legion of Honor by the French government. He founded the *Official Gazette of the United States Patent Office*, edited the *Reports of the Paris Exposition*, and published, besides many official reports of value, the *American Mechanical Dictionary* (1876) and the *New Mechanical Dictionary* (1884).

KNIGHT, ELLIS CORNELIA (1757-1817). An English author, daughter of Rear Admiral Sir Joseph Knight. At his death (1775) his widow and child went to live in Italy, and, when her mother also died, Cornelia returned to England in charge of her friends, Lady Hamilton and Admiral Nelson (1799). She was companion to Queen Charlotte (1805-13), afterward to the Princess of Wales, and her autobiography, not written to gratify the craving for details of court life, is valuable on account of its reliable narration of facts. It was edited and published posthumously (1861). Other books of hers are: *Dinorbas* (1790), a kind of supplement to *Raselas*; two heavy romances, *Marcus Flaminius* (1792), a didactic romance aiming to give a picture of Roman military, political, and social life, and *Sir Guy de Lusignan* (1833); her chief work, *A Description of Latium or La Campagna di Roma* (1805); besides a volume of prayer and hymns from the German (1832). The last 20 years of her life were spent abroad, and she died in Paris.

KNIGHT, JOHN PRESCOTT (1803-81). An English portrait and genre painter. He was born at Stafford, son of the comedian, Edward Knight, who placed him as clerk with a West

India merchant. The merchant having failed, young Knight amused himself by copying from Benjamin West's work, which he did so well that his father allowed him to become a pupil of Sass and of George Clint and in 1823 at the Royal Academy. His best-known works are his portraits of the Duke of Wellington for the London City Club, the Duke of Cambridge for Christ's Hospital, Sir George Burrows for St. Bartholomew's Hospital, and the group portraits "Waterloo Banquet" and "Peninsular Heroes." His "Sacking a Church in the Time of John Knox" is in the Tate Gallery, London. He was elected a member of the Royal Academy in 1844, was professor of perspective there, and served as secretary from 1848 to 1873.

KNIGHT, RICHARD PAYNE (1750-1824). An English archaeologist and philologist. Owing to ill health, he had but a few years of actual schooling, which, however, his vast fortune enabled him to supplement by extensive travel. In Italy (1767 and subsequently) he interested himself in the study of art and of classical antiquities and upon his return devoted himself to the enlarging of the archaeological collection he had made in Italy and to publishing his memoirs. He was returned to Parliament, but, though serving from 1780 to 1806, seldom participated in the debates. From 1814 he was a trustee of the British Museum, to which at his death he left his magnificent collection of ancient bronzes and Greek coins, valued at £50,000. In addition to this bequest, the results of his extensive travels and researches appeared in numerous publications, including his *Account of the Remains of the Workshop of Præpulus Lately Existing at Isernia in the Kingdom of Naples* (1786). His *Analytical Essay on the Greek Alphabet* (1791) created a sensation, because in it Knight was the first to question the authenticity of certain Greek inscriptions which Fourmont had claimed to have found in Laconia, and which such eminent scholars as Winkelmann and Heyne had accepted as genuine; later, Knight's suspicions were proved to be correct. While his best work is that on the *Principles of Taste* (1805), he expended much careful study on an edition of Homer (1816).

KNIGHT, RIDGWAY (DANIEL RIDGWAY) (c.1850-). An American figure and landscape painter, born in Philadelphia. He was a pupil of Gleyre and Meissonier, made his home in France, with his studio at Poissy, and exhibited chiefly at the Paris Salon. His subjects are French peasant scenes, painted with a certain refinement of color, sound in drawing, and of ideal conception, but are without real power or inspiration. He received several awards at the Salon, a gold medal at Munich in 1888, the cross of the French Legion of Honor in 1892 (Officer, 1909), the grand medal of honor at Philadelphia in 1893, and the Bavarian Order of St. Michael. Among his chief paintings are "The Veteran"; "The Old Beau"; "Warrior Women"; "Harvest Scene"; "Sans dot"; "Chat-boxes"; "L'Appel au passeur"; "Hauling the Ferry" (Pennsylvania Academy of Fine Arts); "The Shepherdess" (Brooklyn Institute Museum).

KNIGHT, SARAH KEMBLE (1666-1727). A preacher and traveler, born in Boston, the daughter of Thomas Kemble, a merchant. Having been left a widow, in middle life she opened a school which gained some reputation in Boston and included among its pupils Benjamin Franklin. Before opening this school, Madame Knight,

as she was generally called, took a journey in 1704 on horseback from Boston to New York—for those days an unparalleled feat for a woman. She recounted her experiences in the "journals" which have made her known to students of Colonial literature and history. The discomforts of primitive traveling are described with much sprightliness and not a little humor. The writer's personality emerges also as that of a modern American woman in embryo. Little is known of her later life. She seems to have removed to Norwalk, Conn., and there to have got into trouble for selling liquors to the Indians—an offense which she herself charged to her maid. The small diary of her Boston to New York journey was first edited in 1825 by Theodore Dwight. Forty years later it was reprinted with additional biographical information, and there is a recent edition (Norwich, Conn.). Consult M. C. Tyler, *History of American Literature*, vol. ii (New York, 1897-99).

KNIGHT, THOMAS ANDREW (1759-1838). An English horticulturist, born near Ludlow, in Shropshire. He was educated at Balliol College, Oxford, and subsequently devoted himself to researches in vegetable and animal physiology. In 1795 he published his views on the transmission of diseases among fruit trees, which attracted much attention. In addition to many papers he published a *Treatise on the Culture of the Apple and Pear, and on the Manufacture of Cider and Perry* (1797), a work which passed through several editions. The catalogue of "British Works on Gardening" in London's Encyclopædia of the year 1824 contains a list of 116 treatises or papers on various subjects connected with theoretic or practical horticulture which are attributed to this writer. Many of his papers, with a biographical memoir, were published posthumously under the editorship of Bentham and Lindley, as *A Selection from the Physiological and Horticultural Papers Published in the Transactions of the Royal and Horticultural Societies by the Late Thomas Andrew Knight* (1841).

KNIGHT, WILLIAM ANGUS (1836-1916). A British writer. He was born at Modrington, Scotland, and was educated at the University of Edinburgh. From 1876 to 1902 he was professor of moral philosophy in the University of St. Andrews. In the field of philosophy his work, editorial and other, includes his collection of *Philosophical Classics for English Readers* (15 vols., 1880-90), for which he wrote: *Hume* (1886); *Essays in Philosophy, Old and New* (1890); *The Philosophy of the Beautiful* (2 vols., 1891-93); *The Christian Ethic* (1894); *Aspects of Theism* (1894). He is probably best known, however, for his works on Wordsworth. Besides his edition of *Wordsworth's Works and Life* (11 vols., 1881-89) and *The Transactions of the Wordsworth Society* (1880-86), mention should be made of his *Selections from Wordsworth* (1889); *Wordsworthiana* (1889); *Through the Wordsworth Country* (1892); *Wordsworth's Prose* (1893); *The English Lake District, as Interpreted in the Poems of Wordsworth* (1878-91); *The Works of William Wordsworth and Dorothy Wordsworth* (12 vols., 1896-97). He presented to the trustees of Dove Cottage, Grasmere, the poet's former home, all the editions of Wordsworth's poems which he possessed. His later works are: *Dove Cottage from 1800 to 1900* (1900); *Lord Monboddo and Some of his Contemporaries* (1900); *Inter Amicos* (1901);

Pro Patria et Regina (1901); *Retrospects* (1903); *The Poets on Christmas* (1906); *Things New and Old* (1909); *The Golden Wisdom of the Apocrypha* (1910); *The Glamour of Oxford* (1911); *The Browning Centenary* (1912); *An Eastern Anthology* (1912); *Coleridge and Wordsworth in the West Country: Their Friendship, Work, and Surroundings* (1914).

KNIGHTHOOD. See **KNIGHT**.

KNIGHT OF LA MANCHA. Don Quixote, the hero of Cervantes' novel of that name.

KNIGHT OF THE CHARRETTE. See **CHARRETTE, KNIGHT OF THE**.

KNIGHT OF THE SWAN. See **SWAN, KNIGHT OF THE, CHEVALIER AU CYGNE**.

KNIGHTS, THE. See **ARISTOPHANES**.

KNIGHTS AND LADIES OF HONOR. A fraternal society organized in Kentucky in 1877 for social and beneficial purposes. Men and women are admitted to membership on equal terms. The central authority is the supreme lodge, and the chief officer has the title of supreme protector. The order had in 1914 15 grand lodges and 1230 subordinate lodges, representing a total membership of 70,000. Since its organization it has dispensed benefits to the beneficiaries of deceased members amounting to over \$34,000,000.

KNIGHTS ERRANT. Wandering knights, who, after the definite object offered by the Crusades had been removed, traveled through France and Spain in search of adventure.

KNIGHTS OF CHRIST IN PORTUGAL, ORDER OF. See **CHRIST, ORDER OF KNIGHTS OF, IN PORTUGAL**.

KNIGHTS OF COLUMBUS. A Roman Catholic fraternal benevolent society, founded in New Haven, Conn., in February, 1882, to render pecuniary aid to its members and their beneficiaries, to assist its sick and disabled members, and to promote mutual social and intellectual intercourse. It is governed by a supreme council, the members of which are elected by the various State councils. On July 1, 1914, there were 326,858 members, of whom 106,281 were insured with benefit certificates in force at that date amounting to \$112,286,750. The death claims paid during the fiscal year ending June 30, 1914, amounted to \$723,475, and from the beginning of the organization up to the latter date all death claims paid totaled \$7,308,682. The supreme headquarters are at New Haven, Conn. The society is thoroughly organized in every State in the United States, in every province in the Dominion of Canada, in Cuba, Porto Rico, Newfoundland, the Philippine Islands, and Alaska.

KNIGHTS OF HONOR. A fraternal benefit society in the United States, organized at Louisville, Ky., June 30, 1873, by the institution of Golden Lodge No. 1 with 17 charter members. Its objects are the social, moral, and intellectual elevation of its members, the establishment of bonds of fellowship between them, and the payment of death benefits to the widows and orphans of deceased members. It is incorporated under the laws of the State of Missouri, with headquarters at St. Louis. The supreme lodge is the executive head of the order and is composed of the officers and of representatives from the various grand lodges. The grand lodges are composed of representatives from subordinate lodges, are governed by officers elected by the representatives, and they control the subordinate lodges in accordance with the laws of the

supreme lodge. The order has paid to beneficiaries since its organization about \$100,000,000. The benefits disbursed during the year ending in 1913 amounted to \$1,203,875. There were in existence, in 1914, 30 grand lodges and 1031 subordinate lodges, representing a membership of about 17,000.

KNIGHTS OF LABOR. A national labor organization in the United States, formed in December, 1869, by leaders of a dissolved local union of garment cutters in Philadelphia. Until 1882 the name and purpose of the order were kept secret, its only official representation being a line of five stars. This secrecy was instituted on the ground of the dislike of employers to organized labor and on the alleged ground that open associations of workmen had hitherto proved failures. Admittance to the order was granted to all persons over 16, except liquor dealers, gamblers, bankers, and lawyers. The government of the Knights of Labor is vested in local assemblies, district assemblies, national trade assemblies, State assemblies, and a general assembly. The administrative power is given to a general master workman, a general worthy foreman, a general secretary treasurer, and a general executive board, consisting of the master workman, the worthy foreman, and three other members. Until 1886, when the order became involved in the Missouri Pacific strike, the membership increased, at first slowly and then rapidly, until it numbered, as was claimed, over 700,000. Thereafter, split by internal dissension and weakened by failing strikes, the membership and influence declined. In 1914 it had less than 100,000 members. The political platform adopted by the Knights of Labor advocated the unlimited coinage of silver, compulsory arbitration, equal rights for both sexes, the ownership by the government of telegraphs, telephones, and railroads, and the common ownership of land. Coöperative enterprises, such as joint partnerships and mutual-benefit funds, were started by the order. The order formerly published the *Journal of United Labor* as its official organ. Consult: Ely, *The Labor Movement in America* (New York, 1886); *The Quarterly Journal of Economics*, vol. i (Boston, 1887); William Kirk, *Knights of Labor and the American Federation of Labor* (New York, 1906). See LABOR, AMERICAN FEDERATION OF; LABOR ORGANIZATIONS; TRADE UNIONS.

KNIGHTS OF MALTA. See SAINT JOHN OF JERUSALEM, KNIGHTS OF.

KNIGHTS OF THE GOLDEN CIRCLE. In American history, a secret society whose object was to bring the Civil War to a close and restore the "Union as it was." Its strength lay chiefly in Ohio, Indiana, and Illinois. There are those who trace the movement to an organization of the same name which existed before the Civil War, composed of Democrats whose purpose was to further the interests of the South by securing an extension of the area devoted to slavery. Each castle, or lodge, of the order was said to be divided into an outer and an inner temple, and only those persons were admitted who were known to be thoroughly "sound on the nigger." In the presidential campaign of 1860 the Knights took an active part in bringing about the disruption of the Democratic party over the question of slavery. In the latter part of 1860 castles were established in some of the States north of the Ohio River, and the order spread so rapidly that in May, 1862, a United

States grand jury estimated that there were 40,000 members in Indiana alone. In May, 1863, the Knights and other disaffected persons attempted an armed demonstration at Indianapolis, but it resulted in a ridiculous fiasco that was known as the Battle of Pogue's Run. In the fall of 1863, owing to the publicity given to the treasonable purposes of the organization by Gov. O. P. Morton (q.v.), General Carrington, and other Union authorities, who employed spies to ferret out its secrets, the Order of the Knights of the Golden Circle was disbanded and was succeeded by the Order of American Knights, which in the early part of 1864 in turn gave place to the Sons of Liberty. This last-named order had a large membership in Ohio, Kentucky, Indiana, Illinois, and Missouri. Its supreme commander was Clement Vallandigham (q.v.), of Ohio. Its ritual asserted that the Constitution is a compact and denied the right of the national government to coerce a sovereign State. The order consisted of two organizations, one within the other. Those who entered the outer organization were told that the object of the order was to secure the success of the Democratic party at the coming presidential election, the inner organization was a military one, whose aim was to give aid and comfort to the South. Large quantities of arms were purchased, and hand grenades, clockwork machines for setting fire to government property, and Greek fire were manufactured. At Indianapolis 32 boxes labeled "Sunday-school books," but containing arms and ammunition, were seized by the police, and numerous seizures were made elsewhere. In some places, both at this time and previously, the draft was resisted by force of arms, and deserters and escaped prisoners were protected against the United States officers. In Indiana some of the Democratic State officials were members of the order, while others were in sympathy with it. The most important project of the Sons of Liberty was one for an uprising throughout Ohio, Indiana, Illinois, and Missouri, which should free the Confederate prisoners in those States and set up a Northwestern Confederacy. A day was set for the accomplishment of the enterprise, but the attempt was never made. A number of the leaders were arrested, and three (Bowles, Milligan, and Horsey) were condemned to death by a military commission, but after an imprisonment of 18 months were set free by the United States Supreme Court on the ground that the military commission had no jurisdiction. Consult: *An Authentic Exposition of the Knights of the Golden Circle* (Indianapolis, 1861); Holt, "Report on Secret Orders," in McPherson's *History of the Rebellion* (Washington, 1876); Foulke's *Life of Oliver P. Morton* (2 vols., New York, 1898); Rhodes, *History of the United States from the Compromise of 1850*, vol. v (ib., 1904).

KNIGHTS OF THE GOLDEN EAGLE. A fraternal organization, founded in 1873. There were, in 1914, 14 grand castles, 6 grand temples, 727 castles, and 318 temples. The members numbered about 83,000. The order has disbursed since its organization about \$6,000,000 and during the fiscal year 1913 had disbursed benefit amounting to about \$325,000.

KNIGHTS OF THE HOLY SEPULCHRE. See HOLY SEPULCHRE, KNIGHTS OF THE.

KNIGHTS OF THE MACCABEES. See MACCABEES, KNIGHTS OF THE.

KNIGHTS OF THE SHIRE, or KNIGHTS

OF PARLIAMENT. Knights formerly chosen by the freeholders of every county to represent the county in Parliament and originally inhabitants of the places for which they were chosen.

KNIGHT'S SERVICE. See KNIGHT.

KNIGHT'S TALE. One of the poems composing Chaucer's *Canterbury Tales* and containing the story of Palamon and Arcite (q.v.).

KNIGHTS' TEMPLARS. See TEMPLARS.

KNIGHTSTOWN. A town in Henry Co., Ind., 34 miles east of Indianapolis, on the Blue River and on the Pittsburgh, Cincinnati, Chicago, and St. Louis and the Cleveland, Cincinnati, Chicago, and St. Louis railroads (Map: Indiana, F 5). The State Soldiers and Sailors Orphans Home is a short distance south of the town, and there is a Carnegie library here. Knightstown has good water power and natural gas. There are flour mills, saw and planing mills, two large poultry-packing establishments, automobile works, machine shops, a wire-fence factory, a buggy factory, etc. The water works and electric-light and power plant are owned by the municipality. Pop., 1900, 1942; 1910, 2008.

KNIK. See IDITAROD.

KNILLE, kni'l'e, OTTO (1832-98). A German historical painter, born at Osnabrück. He studied at the Düsseldorf Academy under Karl Sohn, Hildebrandt, and Schadow, then in Paris under Couture, spent four years in Munich (1854-58), where he painted "The Moors Frightened by the Dead Body of the Cid" (1858, Hanover Museum), and after a stay of three years in Italy settled in Berlin. In 1865 he executed mural paintings in the castle of Marienburg, near Hildesheim, representing scenes from the legendary lore of Thuringia, and in 1873-84 decorated the staircase of the University Library in Berlin with four frieze paintings, personating in animated groups of famous men "Education in Antiquity," "Scholastic Science," "The Humanists and Reformers," and "The New Classics of Germany." For this meritorious work he was awarded the great gold medal at the Berlin Exhibition in 1886. Among his other works the brilliant "Tannhäuser and Venus" (1873) and "Disputation of Professors of the Sorbonne before St. Louis," both in the National Gallery, Berlin, commend themselves to special attention. He was also known as an illustrator and wrote *Grubeleben eines Malers über seine Kunst* (1887) and *Wollen und Können in der Malerei* (1897). In 1874 he was appointed professor at the Berlin Academy. He became a member of the Academy in 1880.

KNIPOVITCH, k'ni-pó'vich, NIKOLAI MIKHAILOVITCH (1862-). A Russian zoölogist and hydrographer. He was born at Sveaborg and was educated at St. Petersburg University. In 1892 he was appointed junior zoölogist at the Imperial Museum of Natural History (senior zoölogist, 1900), in 1895 he made important biological and hydrographical studies in the northwestern region of the White Sea, and two years later he organized an expedition to explore the shores of Lake Morat. He was the Russian delegate to the International Hydrographic Commission after 1901, a member of the International Polar Commission, department editor of the Russian *Encyclopedic Dictionary* for many years, and professor of physiological chemistry at a Polish women's medical institute. His published works include: *The State of the Maritime, Fishing, and Animal Industries of Archangel* (1895); *An Account of the Navigation of*

the Arctic Ocean (1896); *Scientific-Commercial Studies of the Lake Morat Region* (1897-99); *Zoologische Ergebnisse der russisch Expedition nach Spitzbergen* (1901), *Oceanography of the European Arctic Ocean* (1905).

KNIPPERDOLLINCK, knip'pér-döl'lipk, BERNARD (?-1536). A leader of the Anabaptists of the sixteenth century. He was born in Münster, of a prominent family, became a merchant, embraced the Reformation, and joined the Anabaptists in 1527. He was elected burgo-master of Münster in 1534 and upheld John of Leyden (q.v.) in his excesses. In the kingdom John set up he was Vice Regent. Consequently involved in the ruin that befell John, he was tortured and killed Jan. 23, 1536. See ANABAPTISTS.

KNITCHANIN, kné'chá-nén', STEPHAN PETROKNITCH (1807-55). A Servian general, born at Knitch. He was a merchant and early gained great political influence with Prince Miloš, who promoted him in 1839 to the head of the Provincial Government of Semendria. When his patron fell, Knitchanin was exiled, but two years later (1842) he returned, on the invitation of Prince Alexander Karageorgievitch and became Councilor of State. He held command in the war with Hungary (1848) at the head of a Servian army of volunteers, but was unsuccessful and had to retreat, and in 1849 was recalled to Servia, where in 1854 Prince Alexander made him Minister of War and head of the Council.

KNITTING (from the verb *knit*, AS. *cnyttan*, Ger. *knutten*). The art of building up a solid fabric from yarn by looping with knitting needles or by machinery modeled on the knitting-needle process. *Crocheting* resembles knitting, except that it is executed with the crochet hook. *Netting* is a more ancient art. (See NETS.) In *braiding*, the threads or braids, all longitudinal, are twisted diagonally over and under one another. *Weaving* is more formal than any of these processes, having two complete sets of threads that intersect at right angles to each other, except in lace and leno weaves. The qualities that distinguish *knit goods* are their superior elasticity, that makes them fit irregular shapes snugly, and their porousness, that makes them particularly suitable for use as underwear.

Hand Knitting. In knitting by hand the yarn is formed on a knitting needle in a row of loops, through each of which a second row of loops is successively passed by means of a second needle, which then adds a third row to the second row, and so on till the fabric is completed. The needles used are of steel, wood, bone, or rubber. Those of steel are usually slender and pointed at each end, while those of other materials are thicker, and pointed at one end with a round knob at the other. Technical terms of hand knitting are: To *cast on* is to make the first row of loops. To *cast off* is to knit two stitches and then pass the first over the second, securing the last stitch by drawing the yarn through it. A *purl*, *seam*, or *rib* is formed by bringing the yarn in front of the needle. To *slip a stitch* is to take it off the needle without either knitting or purling.

Hand Machine. The first knitting machine was invented in 1589 by the Rev William Lee (q.v.), of Nottinghamshire, and by the middle of the eighteenth century had become so widely used as to be an important feeder of British commerce. It was a very simple affair, modeled

after the process whose work it attempted to reproduce; but its complicated modern successor depends for its efficiency on the same essential principle.

In Lee's stocking frame, instead of one needle to hold the stationary loop while those of the moving row are being inserted, there are as many needles as there are to be loops in the breadth of the web, and these are so made as to form and give off the loops alternately. Each needle terminates in a hook or small indentation. The other end of the needle is fixed into a casting formed to fit into a frame and be securely fastened, side by side with the rest of the needles. Between the needles are placed thin plates, called *sinkers*, in two rows, in one row the sinkers move freely on an axis, in the other they are all fixed to a bar and move with it. The object of the loose ones, or *jack sinkers*, is to make loops by pressing the thread down beneath the needles. The other row on the bar, or *lead sinkers*, is brought down so as to press simultaneously on the hooks of the needles and press their points down into the little depression so that they will pass through the loops without catching one way, and take them up when opened and drawn in the contrary direction. The great ingenuity of Lee's invention lies in this arrangement for closing the hook in the needle so that one loop can be drawn through another.

Like many inventors, Lee failed to profit largely by his genius, although, in the expectation of realizing a fortune, he resigned his activities as clergyman, giving up his living at Calverton that paid him £40 a year. His own freehold enabled him to meet the cost of experiments. In the portrait, now lost but copied in the arms of the London Framework Knitters Company, he appears in the gown and cap of a master of arts, pointing to a hose on his stocking frame; while on the other side a female is showing her empty and therefore useless knitting pins. The original painting was inscribed: "In the year 1589, the ingenious William Lee, M.A. of St. John's College, Cambridge, devised the profitable art for stockings (but being despised went to France), yet of iron to himself, but to us and to others of good; in memory of which this is painted."

Accompanied by his brother James, who had helped him much in the construction of the machine, and who was always his most skillful operator, Lee took the frame to London in the hope of winning the patronage of the sovereign. Queen Elizabeth's kinsman Hunsdon thought it was a miraculous invention and brought her to see it at Lee's lodgings in Bunhill Row. She expressed her approval of its ingenious construction, but was disappointed because the product was a coarse worsted stocking instead of fine silk hose. Lord Hunsdon begged her to give Lee a patent for its use, but she refused. In order to please the Queen Lee constructed a frame, with 20 needles to the inch instead of the previous eight, on which in 1598 was made a pair of silk stockings, which the Queen was gracious enough to accept and praise, but that was all. After her death, not receiving any encouragement from King James or the English court, Lee accepted the invitation of Sully, Ambassador of Henry IV, to transfer himself and his invention to France. He settled in Rouen, with James Lee and eight other operators and eight frames, and "wrought there with great applause." But his expectations of a special patent were ended

by the assassination of the French King, and he died, a disappointed man, in 1610.

On his death his brother James and six workmen with seven of the machines returned to London, the other two workmen with the machine continuing to work at Rouen. Before long the London Framework Knitters Company was formed for regulating wages and production and in 1657 was incorporated by Cromwell. By 1695 there were 1500 machines active in and near London. The first stockings of cotton yarn were made in 1730.

No important improvement was made in Lee's machine until 1758, when Jedediah Strutt added a second series of needles, by the use of which it became possible to produce ribbed fabrics. In 1816 Marc L. Brunel invented a circular machine that produced a tubular web instead of the previous flat one.

Power Machine. Power was first applied to the knitting machine by Bailey in 1831. The machinery used in power knitting is noteworthy. While the spindle is necessary in the preparation of yarn for either weaving or knitting, there is no comparison between the simplicity of looms—even such looms as work on the most elaborate fabrics—and the complexity of knitting machines. In the weaving industry only one loom is required to produce a particular fabric. In statements of the capacity of knitting mills it would be clearer to specify, not the number of machines, but the number of *sets of machines*, since as many as five are often required in the production of a single garment. Furthermore, the work of every three knitting machines has to be supplemented by that of a sewing machine. Then, too, improvements in knitting machinery are frequent and important, and machines but little worn often have to be replaced by newer inventions. Unfortunately the patents on knitting machinery are in a confused state, and some manufacturers operate their new machines secretly, without taking out patents, in order to avoid infringement by rivals.

The latch needle was first patented in France in 1806 by Jandeau, and a modification of it in the United States in 1863 by Hibbert. In the latch-needle machine a hinged latch folds back on the needle so that the hook may take up the thread, and then closes down over the hook so that it may pass the hoop through the preceding loop. The movement of the latch is regulated by the movement of the yarn as it passes through.

On account of their greater speed and capacity circular machines have largely superseded all others. In these machines "a circular series of vertical parallel needles slide in grooves in a cylinder and are raised and lowered successively by an external rotating cylinder, that has on the inner side cams acting on the needles." In 1900 the total number of knitting machines in the United States was 115,019, over 96 per cent of which were power machines and 81 per cent circular and circular-hosiery machines. Of the total, 15 per cent were spring-beard-needle machines, and 85 per cent latch-needle machines. The remarkable increase in popularity of all kinds of knitted fabrics—"hosiery and knit goods," as they are termed popularly and in the census reports—including underwear, sweaters and cardigan jackets, gloves and mittens, hoods, scarfs and nubbies, shawls, leggings and gaiters, fancy knit goods, wristers, jerseys and tights,

stockings, and astrakhan fabrics, is shown not only by the number of machines invented to produce them (over 3000), but also by the enormous increase in production. In 1849 there were only 49 establishments in the United States, with an annual product of \$1,028,102. During the next decade the annual product increased 700 per cent, and in succeeding decades 61, 128, 42, 43, 46, and 108 per cent respectively. In 1909 the number of factories producing knit goods was 1374, with an annual product valued at \$200,143,527. In 1869 the number of knitting machines reported was 5625; 69,047 in 1889; 88,374 in 1904; 116,019 in 1909. In the early days of the industry in the United States wool was used almost exclusively. But in 1909 the value of the cotton yarn purchased was \$48,165,749; of woolen yarn, \$3,834,094; of worsted, \$10,116,325; of merino (cotton mixed), \$2,667,051; of silk, \$3,606,599; of linen, jute and other, \$180,818. This serves as a fair basis of comparison, as most of the mills buy their yarn instead of spinning it for themselves, the amount of cotton purchased in the form of yarn being three times that purchased unspun. Among the States New York leads, with a production of knit goods in 1909 of \$67,130,296; Pennsylvania being second, with \$49,657,506; Massachusetts, third, with \$14,736,025.

Bibliography. William Felkin, *Hosiery and Lace*, in Bevan's series of books entitled "British Manufacturing Industries" (London, 1876); M. A. Metcalf, *Knitting* (Chicago, 1909), with a wealth of illustrations and text describing power-machine knitting in all its forms, Quilter and Chamberlain, *Frame-work Knitting and Hosiery Manufacture* (Leicester, England, 1911); Ernest Tompkins, *The Science of Knitting* (New York, 1914).

KNOBEL, knô'bel, KARL AUGUST (1807-63). A German Old Testament scholar. He was born near Sorau in Silesia and was educated there and at Breslau. In 1831 he became docent and four years later professor extraordinary of theology at Breslau, and in 1839 became professor at Giessen, where he spent the remainder of his life. His greatest service was the preparation of the commentaries upon the books of Ecclesiastes (1836), Isaiah (1843; 3d ed., 1861), Genesis (1852; 2d ed., 1860), Exodus and Leviticus (1857), and Numbers, Deuteronomy, and Joshua (1861), in the series known as *Kurze-fassende exegetisches Handbuch zum alten Testament*, edited by Hirzel. The commentaries upon Isaiah and the books of the Pentateuch were rewritten by August Dillmann (q.v.).

KNOBELSDORFF, knô'bels-dôrf, GEORG WENZESLAUS VON (1697-1753). A German architect, born at Kuckshüdel, near Krossen. He served in the army for some years, but retired to study architecture and to travel in Italy and France. He was appointed director of royal buildings in Prussia by Frederick II, who, when Crown Prince, had been his patron. His best-known works are the Berlin Opera House, the Sans Souci Palace at Potsdam, and the extension of the palace at Charlottenburg, all in the classic style. He also laid out part of the town, and the park at Potsdam, and the Thiergarten in Berlin.

KNOBELSDORFF-BRENKENHOFF, brêk'eu-hôf, NATALY VON (1860-). A German novelist, known under her maiden name, Nataly von Eschstruth, born at Hofgeismar, Hesse-Cassel, the daughter of an officer, and

educated at Berlin. She traveled widely, in 1890 married Capt. Franz Knobelsdorff-Brenkenhoff, and later settled for a time at Schwerin. She began early to write plays, e.g., *In des Königs Rook* (1882). Among her novels, which are popular but not very deep, may be mentioned: *Wolfsburg* (1885); *Gänseseele, eine Hofgeschichte* (1886; 5th ed., 1891); *Polnisch Blut* (1887; 4th ed., 1894); *Hofluft* (1889; 5th ed., 1894); *Sternschnuppen* (1890); *Von Gottes Gnaden* (1895); *Jung gefreit* (1897); *Der Majoratsherr* (1898); *Aus vollem Leben* (1900); *Sonnenfunken* (1901); *Der verlorene Sohn* (1902); *Jedem das Seine* (1903); *Frieden* (1905); *Die Roggenmuhme* (1910); *Væ Victis* (1911). Of some little dramas, *Karl Augusts Brautfahrt* and *Die Sturmnäse* (3d ed., 1888) were performed. In 1887 appeared a volume of her poems under the title *Wegekraut*, and in 1899 the publication of an edition of her collected works was begun.

KNOBKERRIE, nób'kêr'i. A short knobbed club, used by the Zulu and other South African tribes, mainly as a missile against smaller animals and birds, which are often brought down on the wing with marvelous dexterity. It was also employed as a weapon, e.g., in hand-to-hand encounters. Similar missile clubs occur in Fiji.

KNOBLAUCH, knóp'louk, EDWARD (1874-). An American dramatist, born in New York City. He graduated from Harvard University in 1896, studied the drama in Paris for a year, and then settled in London as a playwright. In *The Partikler Pet*, an adaptation from the French, Cyril Maude starred in 1905, and in 1906 Lena Ashwell played Deborah in his play *The Shulamite*. In 1910 *The Cottage in the Air* was given in New York City. The season of 1911 was marked by his two successes, *The Faun* in America and *Kismet* in London and later in the United States. He collaborated with Arnold Bennett on *Milestones* (1912) and with Wilfred T. Coleby on *The Headmaster* (1913). His play *My Lady's Dress* was produced in New York in 1914 and *Marie-Odile* in 1915.

KNOBLAUCH, HERMANN (1820-95). A German physicist, born in Berlin. Having finished his studies, he became privatdocent at the University of Berlin, then professor at Marburg (1849), and in 1854 was appointed professor at the University of Halle. In 1878 he was appointed president of the Leopoldinisch-Karolinische Akademie at Halle. He retired in 1895. His publications, which are to be found mostly in the *Monatsschriften* of the Berlin Academy and in the *Abhandlungen der naturforschenden Gesellschaft zu Halle*, treat especially of radiation of heat. His experiments verified and extended Mellani's work on radiant energy. He was one of the first who demonstrated that the warmth we experience when we stand before a fire reaches us in the same way as the rays of the sun, i.e., by radiation, without affecting the temperature of the vacuum or the intervening material medium through which the heat is transmitted.

KNOCHE, knô'ke, WALTER ALFRED (1881-). A German meteorologist, born in Berlin and educated at the universities of Geneva and Berlin. In 1906 he became an assistant in the Royal Prussian Meteorological Institute and in 1907 first assistant in the public weather service. In 1908 he studied the climate of the Bolivian plateaus and in 1910 undertook the work

which made him famous, the direction of the Central Meteorological Institute of Chile. He brought out three important publications of this institute: *Observaciones en la Mina Aguila 5200*, *Observaciones de provincias* (1910), and *Anuario meteorológico de Chile* (1911).

KNOCKE, knók'e. A seaside resort in Belgium, 9 miles north of Bruges, with a population of 1363 (1910). It has a monument erected to the celebrated animal painter, Alfred Verwee. During the European War of 1914 Knocke was occupied by the Germans and used as a base for advances on Nieuport (q.v.) and Calais. It was heavily bombarded by a British fleet, which destroyed the greater part of the town and a German military base. See WAR IN EUROPE.

KNOCK-KNEE, or **IN-KNEE**. A deformity consisting of such inclination inward of both knees that they are in contact when the person is walking or in a position for walking. There is naturally a slight inclination towards each other of both knees, which is accentuated in the adult female because of the width of the female pelvis; but the legs remain perpendicular in spite of the line of the thighs. In knock-knee the tibiae incline outward, and the feet are separated when standing or walking. The deformity is due to weakness and is usually a development of childhood. It may be caused by rickets (q.v.) or by an injury, or may be secondary to a deformity of the hip joint or ankle joint. It may be followed by a clubfoot (q.v.) of the variety *valgus* or by flat foot. The treatment includes massage and straightening, practicing walking with the feet parallel, and correction with braces. Immediate correction may be secured by operative treatment, either osteotomy (cutting the thigh bone) or osteoclasis (breaking the thigh bone), and putting the joint for a time in a plaster splint. See LEG.

KNOLLES, nölz, **RICHARD** (c.1550-1610). An English historian of the Turks, born probably at Cold Ashby, Northamptonshire. After graduating at Lincoln College, Oxford (1565), he became a fellow there and then head master of the grammar school, Sandwich, Kent, for the remainder of his life. His *Generall Historie of the Turkes from the First Beginning of that Nation* (1604) was reprinted half a dozen times before the end of the century and issued in an abridged form in two volumes in 1701. Dr. Johnson gave high praise to the clearness and purity of its elaborately arranged English, while both Byron and Southey owned Knolles a master of prose composition.

KNOLLYS, nölz, **SIR FRANCIS** (c.1514-96). An English statesman. He was a gentleman pensioner at the court of Henry VIII, and entered Parliament for Horsham in 1542. His aggressive Puritanism rendered the Continent safer for him than England during Queen Mary's reign, but Elizabeth called him to her Privy Council (1558), making him also vice chamberlain of her household and captain of halberdiers, while Lady Knollys, who was the Queen's first cousin, became a woman of the privy chamber. He was made Governor of Portsmouth in 1563, was sent on diplomatic service in Ireland in 1566, and from 1572 until his death was treasurer of the royal household. He was elected to Parliament from Arundel in 1559, from Oxford in 1562, and from Oxfordshire in 1572. The most interesting part of Knollys's career relates to his association with Mary, Queen of Scots, whose custodian he was at Carlisle Castle

(1568) and afterward at Bolton. He conscientiously strove to make a Protestant of her and as conscientiously warned Elizabeth against holding her in prison without a trial, but finally voted for her speedy execution (1587). The following year he took command of the Hertfordshire and Cambridgeshire troops assembled to oppose a landing of Spaniards from the Armada. He was knighted three years before his death. His letters are of more historical importance than his parliamentary speeches or his religious tracts.

KNOLLYS, HANSELD (c.1599-1691). An English Baptist clergyman. He was born at Cawkwell, Lincolnshire, was educated at Cambridge, and was compelled to flee to the American Colonies, where his vigorous attacks on infant baptism speedily involved him in controversy with the authorities. Cotton Mather nicknamed him Mr. Absurd Knowless, although he mentioned him as "godly Ana-baptist." He preached at Dover, N. H., 1638-41, and in the latter year, after a brief stay on Long Island, he returned to London, where, though frequently in trouble with the authorities, he was popular as a preacher. He published several works on theological subjects, and a Hebrew grammar, and left an autobiography, edited by Kiffin (1692). The Hanserd Knollys Society, founded in London in 1845 for the publication of early Baptist writings, issued 10 volumes and then disbanded.

KNOLLYS, or **KNOLLES**, **SIR ROBERT** (c.1317-1407). An English soldier, born in Cheshire. His deserved reputation as a famous fighter was first acquired in Brittany, where he was remarked at the siege of La Roche d'Orient (1346), and he was one of the knights in the Combat of the Thirty in March, 1351, when he was taken prisoner. On his speedy release he took command of a body of freebooters, was custodian to certain Breton castles, and made marauding expeditions into Normandy with Henry of Lancaster (1356-57). As leader of the Great Company, he plundered 40 castles in the valley of the Loire, pillaged Auxerre in 1359, supported John de Montfort at the siege of Auray in 1364, and went with the Black Prince to Spain in 1367, but was recalled in 1370 to England, whose King, Edward III, was planning an invasion of France. Knollys was given charge of the expedition, which, with Calais as a starting point, laid waste the country as far as Rheims and to the environs of Paris itself, but it was unsuccessful in drawing the French into a battle, though they were deterred from invading Wales. Knollys returned to England in time to take the leadership in London at the suppression of the Wat Tyler rebellion, and for this he was given the freedom of the city. Part of the great wealth he had acquired through his raids he spent in endowing colleges and hospitals and in rebuilding churches after his retirement to England.

KNORRHAAN, knör'hän (Dutch *gurnet*, lit., gristle cock). In South Africa, a bustard (q.v.).

KNOPF, nöpf, S(TEGMUND) **ADOLPHUS** (1867-). An American specialist in tuberculosis, born at Halle-on-the-Saale, Germany. He graduated from Bellevue Hospital Medical College (New York University) in 1888 and from the Sorbonne (A.B.) in 1890. He became visiting physician of the New York Health Department's Riverside Sanatorium for Consumptives and director of the National Association for the Study

and Prevention of Tuberculosis. In 1908 he accepted the professorship of medicine in the department of phthisiotherapy in the New York Post-Graduate Hospital and Medical School. His most important work is his prize essay, *Die Tuberkulose als Volks Krankheit und deren Bekämpfung*, published in 1900 by the committee of the International Tuberculosis Congress. It appeared eventually in 27 languages and was translated into English by Dr. Knopf under the title *Tuberculosis as a Disease of the Masses and how to Fight it* (1901; 8th ed., 1911). He published also *Tuberculosis a Preventable and Curable Disease* (1909).

KNORR, knör, IVAN (1853-). A German composer, born at Mewe (West Prussia). When four years old, he was taken by his parents to Russia, where he lived for 11 years and became thoroughly imbued with the spirit of Russian folk music. When in 1868 his parents settled in Leipzig, he entered the conservatory, studying under Moscheles, Richter, and Reinecke. From 1874 to 1883 he taught theory at the conservatory in Charkov, Russia. Upon the recommendation of Brahms he was in 1883 called to the Hoch Conservatory in Frankfurt, succeeding B. Scholz as director of that institution in 1908. His long residence in Russia strongly influenced his music, which has a decidedly Slavic character. He wrote three operas, *Dunja* (1904), *Die Hochzeit* (1907), *Durchs Fenster* (1908); a symphonic phantasy; two orchestral suites; orchestral variations on a folk song from the Ukraine; Ukrainische Liebeslieder; chamber music.

KNORR, LUDWIG (1859-). A German chemist. Born at Munich, he studied there, at Heidelberg, and at Erlangen, and was appointed professor at Würzburg in 1888 and in 1889 professor and director of the laboratories at Jena. He became best known for his work in organic synthesis, especially for his discovery of the pyrazol compounds, of which antipyrine is most commonly used. He also contributed extensively to the chemistry of the alkaloids.

KNORTZ, knörts, KARL (1841-). A German-American author and educator, born at Wetzlar, Prussia, where he studied at the Royal Gymnasium. He took his Ph.D. at Heidelberg in 1863 and came the same year to the United States. He taught at Detroit, Oshkosh, Wis., and Cincinnati, and from 1892 to 1905 was superintendent of the German department in the public schools of Evansville, Ind. He then removed to North Tarrytown, N. Y., where he devoted his time to comparative literature and folklore. He translated into German poems of Whittier, . . . and Walt Whitman, and published *Geschichte der nordamerikanischen Litteratur* (1891). Besides literary essays and works upon child education, he wrote *Marchen und Sagen der nordamerikanischen Indianer* (1871); *Amerikanische Skizzen* (1876); *Modern American Lyrics* (1880); *Aus dem Wigwam* (1880); *Kapital und Arbeit in Amerika* (1881); *Amerikanische Lebensbilder* (1884). Among his other works may be mentioned: *Gedichte*, of which a volume appeared in Reclam's *Universalbibliothek*; *Representative German Poems* (1885; 2d ed., 1889); *Ein amerikanischer Diogenes* (Thoreau) (1898); *Poetischer Hausschatz der Nordamerikaner* (1902); *Nackklänge germanischer Glaubens und Brauchs in Amerika* (1903); *Streifzüge auf dem Gebiete amerikanischer Volkskunde* (1903); *Friedrich Nietzsche*,

der Unzeitgemässe (1909); *Die Insekten in Sage, Brauch, und Literatur* (1910); *Walt Whitman und seine Nachfolger* (1910); *Reptilien und Amphibien in Sage, Sage, und Literatur* (1911); *Teufel, Heeze, und Blocksbergspuk* (1913); *Die Vogel im Sage, Sittte, und Literatur* (1913).

KNOSOS, or **KNOSUS**. See **CNOSUS**.

KNOT (also *gnat*, dialectic *knat*, *knet*; derived, according to popular etymology, from A.S. *Cnūt*, Canute, who was said to have been very fond of the bird). A cosmopolitan snipe (*Tringa canutus*), 10 or 11 inches long, and more than 20 across the wings. The upper parts are black, white, and rufous; in summer the underparts are rufous, while in winter they are white. The breeding habits are almost unknown, and until 1901 the eggs were known only from a single, not very well authenticated, specimen collected by Gen. A. W. Greely, U. S. A. In the year mentioned Dr. Walter, a Russian surgeon, on the exploring vessel *Sarya*, found the knot breeding on the Taimyr Peninsula on the northern coast of Siberia. The nuptial flight was elaborate, the bird circling high in air, now with vibrating, now with motionless wings, uttering a loud, varied whistle. The nests were on the grassy tundra, in shallow depressions. The eggs are usually four in number and vary considerably in form and coloration. The ground color is pale green or yellowish white, marked, more or less densely, with spots of yellowish brown. Knots are generally found in flocks, feeding on small crustaceans and mollusks, and probing the ground like snipes. In summer the knot is to be found only in the Far North, where it seems to be circumpolar, but in winter it migrates far to the south in all directions from its summer home, so that it is found along the shores of all the continents. It is a favorite shore bird with gunners, who know it as robin snipe and gray snipe, and its flesh is delicious.

KNOT, GORDIAN. See **GORDIAN KNOT**.

KNOTE, knö'te, HEINRICH (1870-). A German dramatic tenor, born in Munich. Upon the completion of his studies with Kirchner at Munster, he became (1892) a member of the Munich Court Opera, where he won his great reputation, and where he has remained, with frequent leaves of absence to fill guest engagements. In 1903 he sang at the Metropolitan Opera House and proved one of the most powerful drawing cards, though appearing there at the same time as Caruso. Critics compared his interpretations with those of De Reszke (q.v.). He is unsurpassed in his delineations of Wagner's heroes. He was heard again, with undiminished success, during several subsequent seasons.

KNOT'GRASS. A trailing weed. See **POLYGONACEÆ**.

KNOT'HORN. Any one of the large assemblage of moths included in the family Phycitidæ. The name is derived from the fact that the males frequently have the last joint of the antennæ swollen. The Phycitidæ are usually sombre-colored little moths with rather narrow fore wings and broad hind wings. Their larvæ are very diverse in their habits. Some, like the larvæ of *Ephestia*, infest groceries, feeding upon dried figs, or in flour mills upon flour and grain. Others inhabit silken cases on the bark of trees. Still others attack living fruit. One is the cranberry fruit worm (*Mineola vacinii*). Others web leaves together, as the rascal leaf crumpler

(*Mineola indiginella*). Still others, like *Dakrums coccidiocora*, feed upon living scale insects. One member of this group (*Broctra scitula*) preys upon the black scale of the olive and orange in southern Europe and has recently been introduced into California for the purpose of helping fruit growers to destroy injurious scale insects.

KNOTT, not, CARGILL GILSTON (1856-). A British physicist, born in Penicuik, Scotland. He studied at Edinburgh University, where he taught natural philosophy from 1879 to 1883. Then until 1891 he was professor of physics at Tokyo in the Imperial University of Japan. In 1887 he conducted a magnetic survey of Japan. After his return to Scotland he became lecturer on applied mathematics at Edinburgh in 1892 and was Thomson lecturer (on earthquakes) at the United Free Church College of Aberdeen in 1905-06. He made elaborate mathematical studies of earthquakes in Japan and wrote *The Physics of Earthquake Phenomena* (1908). His work on magnetic strains (published in *Transactions* of the Royal Society of Edinburgh for 1882-83, 1889, 1891; supplemented in its *Proceedings* for 1899) won him the Keith prize of the Royal Society and was followed by the important work on the same subject by Nagaoka, Honda, Shimizu, and Terada of Tokyo University. Knott revised Kelland and Tait's *Quaternions* (3d ed., 1904) and wrote a memoir of P. G. Tait (Oxford, 1911).

KNOTT, JAMES PROCTOR (1830-1911). An American lawyer and politician, born in Marion Co., Ky. Admitted to the bar in 1851, he practiced at Memphis, Mo., until 1862. In 1858 he served in the State House of Representatives, from 1859 to 1862 was Attorney-General, and then returned to Kentucky and practiced law at Lebanon. He was a member of Congress (1867-71, 1877-83) and became noted for his humorous speeches, in one of which he referred to Duluth as "the zenith city of the unsalted seas." From 1883 to 1887 he was Governor of Kentucky. He was a delegate to the Constitutional Convention of the State in 1891 and the following year took the chair of civics and economics in Centre College, Danville, Ky., where in 1894 he was appointed law professor and dean of the law faculty. He resigned in 1901.

KNOTTING AND SPLICING. A knot is a loop or combination of loops and turns joining different parts of a rope or parts of two or more ropes. A splice is a more intimate junction of parts than a knot, the *lay* of the rope being opened, and the ends tucked in so that the size and character of the rope at the place where the splice is made are not greatly changed. Knots are of many kinds and have many uses, but their employment elsewhere is insignificant compared with that on board ship, where they have obtained their full development. They owe their importance to the frictional resistance of the rope, which prevents the parts of the rope from slipping and thus untying the knot.

Knots may be divided into two principal types, those which are tied without separating the strands of a rope and those made by opening out the strands. The first type may be divided into: (a) knots made with two ends of the same or of different ropes knotted together; (b) knots made with the end of a rope passed around or knotted about some object; (c) knots made with the end of a rope knotted about itself; (d) seiz-

ings, in which a small rope is tied around a large one. The second type of knots is divided into (a) knots made in the lay of the rope by separating the strands; and (b) splices, in which two parts of a rope, or the ends of a rope, or two ropes, are joined.

The simplest knot is the *overhand* (Fig. 1) its use is chiefly to hold temporarily the end of a rope from slipping away from the man who intends to knot it permanently at the proper time. Overhand knots are also tied in the ends of rope to prevent their slipping through a block or sheave, i.e., unreeving. In its ordinary use it therefore belongs to class b of the first group but it may be made in the ends of a rope passed about a spar, placing it in classes a and c simultaneously. By making a second overhand knot on top of the first, we get the *square* or *reef* knot (Fig. 2), the commonest and most useful knot known. It differs from the *granny* knot (Fig. 3) in the manner of making the second overhand knot on top of the first. The square knot holds firmly and is quite easily untied, as it does not crush down when subjected to strain. The *granny* knot does not hold nearly so well, almost invariably slipping a little and frequently pulling apart; and when it does hold, the parts jam together so tightly that it is untied with great difficulty. The *sheet* or *becket bend* (Fig. 4) is first cousin to a square knot; instead of slipping one end through the bight of the other rope, it is pushed across underneath its own bends. *Carriek bends* (Figs. 5, 6) are not much used, but are occasionally employed in bending two hawsers together. The *blackwall hitch* (Fig. 8) is used to attach quickly a rope to a hook; the *double blackwall* (Fig. 11) is more secure if the rope is stiff or large in proportion to the hook and therefore liable to slip.

The *bowline* (Fig. 12) is a very useful knot. It serves to form a loop in the end of a rope which will not slip or draw down and yet which can be instantly untied; this latter property is due to the fact that it will not jam tightly, and the parts are free to be separated the instant the strain is removed. The *running bowline* (Fig. 13a) is simply a bowline so made that its loop incloses the rope on which it is made. A *bowline on a bight* (Fig. 13b) is made, as its name indicates, on the bight or loop of a rope. In making it the first part of the operation is the same as tying a bowline, but instead of carrying the bight around the parts on which the knot is made, the loop is opened out and slipped over its own parts. The *cat's-paw* (Fig. 9) is used to shorten up the loop of a rope for the purpose of hooking a tackle to it. When neither end of a rope can be reached, and it is desirable to shorten it between two points, the *sheepshank* (Fig. 17) is used. The *figure-of-eight* knot is rarely used except for ornamental work. The *midshipman's hitch* (Fig. 18) is also rarely used. The *marlinespike hitch* (Fig. 19) is very common and is used in passing seizings and the like. It is an easy way to attach temporarily the ends of a rope to a heaver or marlinespike for pulling on it; the spike or heaver may be quickly withdrawn when the pull is finished.

The *studding-sail* (pronounced *stu'n's'l*) *tack bend* (Fig. 7) is used to bend the tack to the sail and for other purposes as a slipping hitch; the *studding-sail halyard bend* (Fig. 20) is used to bend the halyards to the studding-sail yard and to bend other ropes to spars. The *fisherman's bend* (Fig. 21) and the *magnus hitch*



Overhand Knot
Fig 1



Square Knot
Fig 2.



Granny Knot
Fig 3.



Sheet Bend
Fig 4



Single Carrick Bend
Fig 5.



Double Carrick Bend
Fig 6.



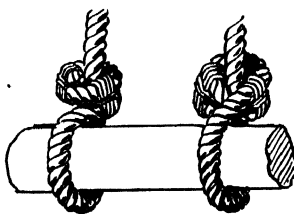
Studding Sail Tack Bend
Fig 7.



Blackwall Hitch (Single)
Fig 8.



A Cats Paw
Fig 9.



Outside Clinch
Fig 10a.

Inside Clinch
Fig 10b.



Double Blackwall Hitch
Fig 11.



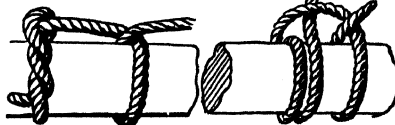
Bowline
Fig 12.



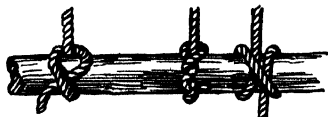
Running Bowline
Fig 13a.



Bowline on a Bight
Fig 13b.



Timber and Half Hitch Magnus Hitch (Loose)
Fig 15.



Half-hitch
Fig 14a.

Timber
Hitch
Fig 14b.

Clove Hitch
Fig 14c.

Wendell
Lindsey.

KNOTTING AND SPLICING—II.



Sheepshank
Fig 17.



Midshipman's Hitch (loose)
Fig 18.



Marling Spike Hitch
Fig 19



Studding Sail Halliard Bend
Fig 20.



Fisherman's Bend
Fig 21

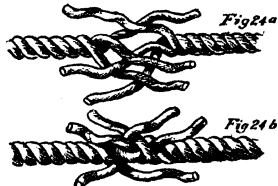


Fig 24^a



Fig 24^b



Fig 24^c



Fig 22^a

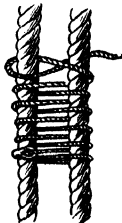
Eye Splice



Fig 22^b



A Round Seizing
Fig 23^a



Racking Seizing
Fig 23^b



Fig 25^a



Fig 25^b



Fig 25^c

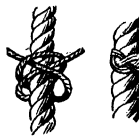
Long Splice



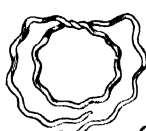
Selvage Fig 27



Cuckold's Neck
Half Crown
Fig 23^c



Turk's Head
Fig 24



Grommet
Fig 26



A Cringle Fig 28.



Wall Fig 29



Fig 30

Wall and Crown



Fig 32^a

Double Matthew Walker



Fig 32^b



Fig 33^a

Single Matthew Walker.



Fig 33^b



Fig 31^a
Double Wall and
Single Crown



Fig 31^b

Double Wall and
Double Crown



Fig 34^a

Lamard Knot



Fig 34^b

Ward Mitchell
L.S.M.

(Fig. 16) have a great variety of uses. The *timber hitch* (Fig. 14b) is used in hoisting timber and similar articles; the *timber and half hitch* (Fig. 15) is used for hoisting or towing heavy timbers. The *two half hitches* form a convenient slipping hitch. The *clove hitch* (Fig. 14c) is one of the most useful knots known and is used more than any other knot except the square knot. The *inside and outside clinches* (Figs. 10a, 10b) are used when the end of a rope is to be made fast to a heavy object and yet leave the rope clear to work through a pulley or sheave close up to the object; clinches were much used in bending hawsers and cables to anchors.

Seizings are used to tie two parts of a rope together or to secure a rope to another object. The common forms are shown in the sketches (Figs. 23a, 23b, 23c), but there are modifications of these forms too numerous to mention. The *Turk's-head* (Fig. 24) is a variety of seizing put around a single part of rope; it is used on foot ropes to keep them from slipping through the eyes of the stirrups.

Wall knots, wall and crown, manrope knots, and all the other knots of class *a* of the second type are used to form a solid and more or less ornamental knot in a rope to prevent its slipping through a block, hole, or eye.

Splices are used to join two pieces of rope together or form an eye at the end of a rope. The principal kinds are the *eye-splice* (Figs. 22a, 22b), *short splice* (Figs. 24a, 24b, 24c), and *long splice* (Figs. 25a, 25b, 25c, which are shown progressively). A *selvagee* (Fig. 27) is made of rope yarns laid up loosely and held together with marline hitches. A *grommet* (Fig. 26) is made of a single long strand of rope laid up on itself to form a three-stranded ring. A *cringle* (Fig. 28) is a form of grommet made on a rope. Consult: *Book of Knots: Being a Complete Treatise on the Art of Cordage* (5th ed., London, 1887); P. N. Hasluck (ed.), *Knotting and Splicing Ropes and Cordage* (Philadelphia, 1905); J. M. Jutsum, *Knots, Bends, Splices, Shown in Colours, with Tables of Strengths of Ropes, etc., and Wire Rigging* (3d ed., Glasgow, 1906).

KNOTWEED', GIANT. See SACHALINE.

KNOUT (Fr. *knout*, from Russ. *knout*, scourge, from Icel. *knutr*, AS. *cnotta*, Eng. *knot*). A scourge composed of many thongs of skin, plaited and interwoven with wire, which was formerly the customary instrument of punishment in Russia for all kinds of criminals. The offender would be tied to two stakes, stripped, and given the specified number of lashes on the back. The number to be administered corresponded to the degree of crime. Thus, 100 or 120 were equivalent to a death sentence. So severe was this mode of punishment that the most hardened criminals rarely survived the ordeal, the victim commonly dying long before the full count would be reached. The nobility were exempt from the knout by law, but this privilege was not always respected. The knout was abolished by the Emperor Nicholas, who replaced it with the *pleti*, a kind of lash.

KNOWER, HENRY McELDERRY (1868–). An American anatomist, born at Baltimore, Md. He was educated at Johns Hopkins University (A.B., 1890; Ph.D., 1896), where he was assistant in biology (1891–93), fellow (1895–96), instructor in anatomy (1899–1903),

and associate (1903–09). In 1896–97 he taught biology at Williams College, and he served as an assistant in zoology in 1897 and as librarian after 1900 at the Marine Biological Laboratory, Woods Hole, Mass. He lectured at the University of Toronto in 1909–10 and thereafter was professor of anatomy at the University of Cincinnati, and became coeditor and secretary of the *American Journal of Anatomy*. His researches deal particularly with the lymphatic and vascular systems of frogs, with the muscles of the human heart, and with the anatomy and embryology of the Termites.

KNOWLEDGE (from ME. *knowan*, AS. *cnáwan*, Icel. *kná*, OHG. *cnān*; connected with OChurch Slav. *znati*, Lat. *noscere*, Gk. *γινώσκειν*, *gignōskein*, Skt. *jñā*, to know + ME. *-leche*, from Icel. *-leikr*, *-leiki*, an abstract suffix), **THEORY OF, or EPISTEMOLOGY.** The science which is concerned with questions about the existence, the validity, and the extent of knowledge. Because of its fundamental character, dealing as it does with a fact that every other science unquestioningly takes for granted, it is considered a philosophical discipline.

In one sense it can be said that any inquiry into knowledge is a circular procedure. In other words, there must be knowledge to begin with, before inquiry of any sort can be entered upon. In this respect, however, epistemology is not so different from any other science, for every science starts with actually given facts and with some degree of actual knowledge of these facts. The facts that the epistemologist takes as given are the facts that go by the name of knowledge. Everybody knows something, whether much or little, and everybody recognizes that everybody else knows something. In other words, the existence of knowledge is on a par with the existence of *being*. Knowledge is the name given to a certain class of facts of experience as indubitable and as verifiable as any other fact whatever. Just at this point the skeptic puts an objection. He either says that there is no knowledge, or else that if there is we cannot know of it, and that therefore the epistemologist begs the whole question. This objection is not so serious as at first blush it seems to be. Indeed, it has done more than anything else to put epistemology on a scientific basis. For when the objection is scrutinized it will be seen to mean, not that there is no fact in experience answering to the name of knowledge, but that the fact of knowledge is not what it is usually taken to be. In other words, the skeptic—if he knows what he is about—does not deny the existence of knowledge as a fact of experience; but he doubts certain theories of knowledge—e.g., among others the theory that there are objects, styled real, which are in some way represented or copied by other objects styled ideas. He doubts these theories because he knows, or thinks he knows, that they give an account of knowledge which is incompatible with the facts of the case or inconsistent with itself. That is, the skeptic has a theory of his own about knowledge; he is an epistemologist and as such enters upon the arena of scientific discussion.

This analysis of the attitude of the skeptic towards knowledge is so important that it must be dwelt upon at greater length. No man is born a skeptic. No young child is a skeptic. If he becomes one later, the experiences that have brought about the revolution in his view

of the world should help us to a clear insight into the real meaning of this new view. In other words, the rational philosophical skeptic has and gives reasons for his new attitude. He adduces proofs, taken from his own experience, and presumably verified in the experience of others, to establish either the certainty or the probability, or at least the irrefutable possibility, of his ignorance. The stock arguments of skeptics are gathered up into the famous tropes of *Enesidemus* (q.v.); and they are further condensed in the five tropes of Agrippa, a skeptic of the second century of our era. It is worth our while to examine these arguments, as they help us to understand the methods, the assumptions, and therefore the real significance of skepticism in general. The tropes of Agrippa are as follows: 1. The same object gives rise to different impressions. 2. All knowledge presupposes an infinite series of premises, since any disputed proposition must be proved by some other, this latter by still a third, and so *ad infinitum*. 3. All knowledge is relative, since every object presents an appearance that differs according to the differences in the constitutions of the percipients and according to the relations in which the object stands to other objects. 4. All axioms are arbitrary, since dogmatists, to escape the *regressus ad infinitum*, start their argument from some premise which they assume without justification. 5. There is a circle in all reasoning, since the conclusion rests upon the premises, and, contrariwise, the premises rest upon the conclusion.

A survey of these proofs shows that in every one some fact is categorically asserted. No one can venture to say, e.g., that the same object gives rise to different impressions, unless his own experience has furnished him with this knowledge. Once question or deny the reason assigned, and the skeptical conclusion can no longer be maintained by the skeptic without dogmatic assertion of his view as self-evident or without the production of a new reason, which, when disputed, shares the fate of its predecessor. In other words, upon examination it is clear that skepticism cannot recommend itself as an escape from the danger of dogmatic assertion or of an infinite regress of proofs; for we cannot reasonably accept skepticism without proof, and if the skeptic is right, proof involves either unwarranted dogmatism or impossible regress of argument to infinity. The philosophical skeptic assumes the validity of his own argument by which he seeks to prove the fallacy of all argument.

But it may be asked: Why may not the skeptic hold to his skepticism without attempting to establish his position or to dislodge his opponent? The answer is that to cherish any view without proof is to be dogmatic, and this is what the skeptic is, above all things, anxious to avoid. But still, again, it may be urged that, instead of believing in the impossibility of knowledge, one may merely doubt its possibility. It is often said by writers against skepticism that a *skeptical* skepticism is unassailable. In one sense it is. If a man will persist in listening to no reason and in observing no laws of thought, then no argument directed against him will reach him, so long as he takes refuge behind the bulwark of unthinkingness. But what we can do is to convince ourselves by valid reasoning that skepticism, whether dogmatic or doubting, is untenable by a reasonable being.

That is, if we follow the laws of thought we cannot become skeptical with regard to all our knowledge, however skeptical we may be on some of its details. To summarize our argument so far, let us say that we cannot reasonably doubt anything without good reason, and good reason is known reason, and known reason implies the validity of knowledge.

This is not to say that universal doubt is impossible; it is perhaps possible as a disease. Certain abnormal nervous conditions result in a general sense of unreality. Everything seems to be an illusion, a dream. Such pathological skepticism is an undoubted fact and cannot be argued away. Not due to reason, it cannot be removed by reason. Such skepticism belongs to the province not of the philosopher but of the physician.

Now, while what is thus immediately experienced may have for pathological reasons the feeling of unreality attached to it, no theorist or philosopher has ever denied or doubted the presence of facts in immediate experience. The actual existence of what is experienced while it is experienced is perhaps not susceptible of philosophical doubt. The only possible doubt about it pertains to the *significance* of what is thus experienced, i.e., to the implications it may have with reference to what lies beyond immediate experience. If we use the term "immediate knowledge" to designate the presence of fact in experience, it will thus have to be said that immediate knowledge is infallible, indubitable knowledge. But such knowledge is limited to the narrow span of the present moment; when we transcend the present, as we apparently do in memory, we begin to step upon possibly doubtful ground. And even what is generally called perception, as distinct from sensation, is open to doubt, just because in such perception there is always some element of reference to what is not present in immediate experience. It will thus be seen that, if immediate knowledge is infallible, it is likewise practically empty. It is the vision of the "mentally blind." Because of the insignificance of such knowledge, usage has generally declined to call it knowledge. To know, in common parlance, is to experience the significance and meaning of things; it is not merely to experience things in meaningless fashion. At the very least, important knowledge involves the recognition of the identity of things known (the knowledge of acquaintance), and such recognition of identity is in its lowest form the recognition of what is now present in experience as the same with what is remembered to have been present in the past; and this involves a reference beyond present immediate experience; such a "trans-subjective" reference is the very gist of meaning. So we may say that all knowledge as differentiated from dull stupid experiencing is the experience of things as having implications and meanings which point beyond what is actually experienced in the momentary present. Now, all theories of knowledge concern themselves with the nature of these implications, with their tenability, with their source, and with their proper range.

Theories of knowledge are always very closely connected with theories of reality. The nature of this connection has been much discussed. Many philosophers have maintained that a valid metaphysics presupposes an adequate theory of knowledge: thus, Kant wrote "*Prolegomena* to

any Future Metaphysics," and this work consisted in a defense of epistemology as logically prior to any other valid science. On the other hand, Descartes had a metaphysical view as to the relation between the physical and the spiritual, and this view apparently determined his doctrine that knowledge is the existence of clear and distinct ideas. But the very doubt, slight though it be, involved in the last statement shows that it is not always obvious whether a philosopher's metaphysics is determined by his epistemology or whether his epistemology is determined by a previously adopted metaphysics. Ever since Kant's day it has been the contention of many thinkers that epistemology is the logically predetermining discipline; while many thinkers before and since Kant's time have held the opposite view. The critical adjudication of this question is impossible in such an article as this.

It would seem, however, as if Kant's persistent effort to make epistemology fundamental was due to his previously adopted metaphysical view that the contents of experience are purely mental in nature. At any rate, Kant begins his theory of knowledge with the assumption that what is experienced is constituted materially of "sensations." On this assumption no wonder there is difficulty in seeing how there can be knowledge of an objective world. If one were willing to assume some sort of correspondence by way of preestablished harmony between our ideas and the real world, the difficulty would disappear; but such an assumption of preestablished harmony involves the giving up of the attempt to solve the problem, for the harmony between our minds and the world is really the problem over again. Now, Kant thought that a posteriori knowledge, i.e., knowledge of what has actually been experienced, constitutes no difficulty. If we have experienced anything, why should we not know it? But Kant also thought that as a matter of fact we have synthetic knowledge a priori, i.e., constructive knowledge of what has not been experienced and knowledge that is not due to experience. Such knowledge for Kant can be possible on the hypothesis that the knowing mind imposes upon its sensations an order which it afterward in its a priori judgments pronounces to be necessary. In other words, we take out of experience in the act of judgment what we have previously put into experience in the way of construction. This, then, is the famous critical theory of knowledge: scientific knowledge is possible only because the understanding creates nature after its own laws. What is not thus the handiwork of intelligence is not knowable by intellectual beings subject to human limitations.

Now, over against this critical theory of knowledge there stood the naive confidence of reason in its ability to fathom the nature of independent reality. This confidence Kant called dogmatism. For dogmatism needs no mandate from some higher authority, such as Kantian criticism, to prosecute its ends. What it regards as necessary and universal is necessary and universal. All that is required for scientific assurance is that reason should be well advised and clear-headed. This is probably the attitude even yet taken by most persons who have never given much thought to philosophy. Now, this position is perfectly tenable, but only on condition that one is willing to make and acknowledge the assumption involved,

viz., that reason is a unique function equal to its peculiar task of knowing the universe. The difficulty is that this function is so often unsuccessful. In other words, the problem of knowledge is closely connected with the problem of error and ignorance. It would seem, then, that dogmatism is possible only to reason untried by real difficulties.

Now, there was in the field, when Kant attacked this dogmatic philosophy, another theory of knowledge, which went by the name of empiricism. For the empiricist all knowledge comes from experience. The reason, as we have seen, why Kant was unwilling to accept this empiricist position was that he was convinced that there is synthetic knowledge a priori. Once grant that there is no such thing, and Kant's sole reason for his critical philosophy is removed. It is to be noted that Kant never undertook to prove that there actually is a priori synthetic knowledge; he merely took this alleged fact for granted, thinking that he found in mathematical judgments instances of such knowledge. Now, this fact is exactly what the empiricist denies. Most thinkers up to Kant's time had thought that mathematical knowledge was analytic; that mathematical judgment such as that $7 + 5 = 12$ is merely a statement that results from careful analysis of the numbers involved. Into the question whether analyticists or Kantians are correct in their characterization of mathematical judgments we cannot go here. Even at the present time there is difference of opinion among mathematical philosophers on this point. Likewise there is difference of opinion as to whether mathematical judgment are a priori or a posteriori.

The development of evolutionistic theories in the latter half of the nineteenth century made it possible to undertake a reconciliation of the empiricist and aprioristic theories of the origin of knowledge, because, on the assumption that acquired characteristics are acquired, it is possible that what is not due to one's own experience but is congenital in the way of knowledge may still be due to the experience of remote ancestors, transmitted to us their offspring. Spencer was the first to make any significant use of this suggestion. He maintained that at our stage of evolution many judgments are a priori from the point of view of ontogenesis, i.e., that we make such judgments without personally having had the experience of their truth; but that this ability to judge independently of our individual experience is due to inherited tendencies: our progenitors had experiences which produced in them habits of judging, and these habits appear in us as instincts. Of course this attempt to mediate between the empiricist and the apriorist position is involved in all the risk that attends the theory that acquired characteristics are hereditary. See *USE INHERITANCE*.

This view of Spencer is in principle adopted by some pragmatists. (See *PRAGMATISM*.) Thus, James writes: "New truths are the resultants of new experiences and of old truths combined and mutually modifying one another. And since this is the case in the changes of opinion to-day, there is no reason to assume that it has not been so at all times. It follows that very ancient modes of thought may have survived through all the later changes in men's opinions. The most primitive way of thinking may not yet be wholly expunged. Like our five fingers,

our ear bones, our rudimentary caudal appendage, or our other 'vestigial' peculiarities, they may remain as indelible tokens of events in our race history. Our ancestors may at certain moments have struck into ways of thinking which they might conceivably not have found. But once they did so, and after the fact, the inheritance continues. . . . My thesis is this, that our fundamental ways of thinking about things are discoveries of exceedingly remote ancestors, which have been able to preserve themselves throughout the experience of all subsequent times."

But not only does James's pragmatism maintain that our so-called a priori conceptions are transmitted from the experience of our remote ancestors, it also maintains that such conceptions do not give any metaphysical insight into the nature of the reality they enable us to comprehend. "All our conceptions are what the Germans call *Denkmittel*, means by which we handle facts by thinking them. Experience merely as such doesn't come ticketed and labeled, we have first to discover what it is. . . . What we usually do is first to frame some system of concepts mentally classified, serialized, or connected in some intellectual way, and then to use this as a tally by which we 'keep tab' on the impressions that present themselves. When each is referred to some possible place in the conceptual system, it is thereby 'understood.'" Thus, the pragmatic view is "that all our theories are *instrumental*, are mental modes of adaptation to reality, rather than revelations or gnostic answers to some divinely instituted world-enigma." Reality shows itself to us undiluted and untransformed in our life of immediate feeling. "The perceptual flux as such . . . means nothing, and is but what it immediately is. No matter how small a tract of it be taken, it is always a much-at-once, and contains innumerable aspects and characters, which conception can pick out, isolate, and thereafter always intend . . . whatever we distinguish and isolate conceptually is found perceptually to telescope and compenetrates and diffuse into its neighbors. The cuts we make are purely ideal. . . . Out of [sensible] times we cut 'days' and 'nights,' 'summers' and 'winters.'" We say *what* each part of the sensible continuum is, and all these abstract *whats* are concepts. The intellectual life of man consists almost wholly in his substitution of a conceptual order for the perceptual order in which his experience originally comes." So far, then, as knowledge is intellectual, it is falsifying provided it is taken as reproducing the essence and nature of reality. It does not introduce us into the presence of what is known, but palms off upon us a substitute, with which we can manage our business better. The only knowledge which reveals existence to us is the knowledge of acquaintance, the knowledge that surpasses and also underlies all understanding, the knowledge which is lost in immediate vision. But while all intellectual knowledge is falsifying when judged by the test of adequate representation, it is true in the only sense in which such knowledge can be true. Inasmuch as the function of intellect is instrumental, intellect is excellent if it performs its instrumental satisfactorily. This it does when it leads us to immediate experience again. True intellectual knowledge, then, is not open vision, but an aid to securing this vision.

Another interesting theory of knowledge re-

lated to pragmatism is that propounded by Bergson, who agrees with the pragmatist that intellectual knowledge does not present us with the real; but whereas the pragmatist is willing nevertheless to call, in fact insists upon calling, such knowledge true if it performs its instrumental function adequately, Bergson is unwilling so to do. For him all intellectual knowledge is absolutely falsifying when it is directed towards life and spirit. The intellect is a function that has developed with a view to handling matter; and in matter only the geometrical is capable of being comprehended by intellect. The knowledge of intellect is not "speculative," but practical. The only knowledge that can compass life and spirit is intuition. This is capable of being cultivated and will grow when all men combine to secure its development.

The realists of the present have no common distinctive theory of knowledge; some are pragmatistic in their epistemology, while others have individual views which they are endeavoring to develop and maintain. Other views of knowledge admit first something knowable and a faculty, sense, or intellect grasping the objective knowable according to the nature of the knowing powers. They define knowledge as the reproduction of the thing known in the faculty knowing according to the nature of the power knowing: hence sense and mental knowledge.

The bibliography of epistemology includes nearly all the philosophical works of modern times. Specially to be mentioned are: John Locke, *Essay Concerning Human Understanding* (London, 1690; new ed., ib., 1909); George Berkeley, *Treatise Concerning the Principles of Human Knowledge* (ib., 1710; new ed., Philadelphia, 1874); David Hume, *Treatise of Human Nature* (3 vols., London, 1739-40; new ed., Oxford, 1896); id., *Enquiry Concerning Human Understanding* (London, 1748; new ed., Oxford, 1894); Immanuel Kant, *Kritik der reinen Vernunft* (Leipzig, 1781; new ed., Berlin, 1907; trans. by Max Müller, 2d ed., London, 1896); J. G. Fichte, *Grundlage der gesammten Wissenschaftslehre* (Leipzig, 1794; new ed., Bonn, 1834); G. W. F. Hegel, *Wissenschaft der Logik*, vols. iii, v (Berlin, 1841); John Stuart Mill, *Logic, Ratiocinative and Inductive* (London, 1843; 8th ed., 1872); G. W. F. Hegel, "Encyclopädie der philosophischen Wissenschaften im Grundrisse," in *Werke*, vol. vii (Berlin, 1847); R. H. Lotze, *Mikrokosmos* (Leipzig, 1856-64); J. S. Mill, *Examination of Sir William Hamilton's Philosophy* (London, 1865); T. H. Green, *Introduction to Hume* (ib., 1874); R. H. Lotze, *Logik* (Leipzig, 1874); id., *Metaphysik* (ib., 1879); T. H. Green, *Prolegomena to Ethics* (London, 1883); Bradley, *Principles of Logic* (ib., 1883); Bernard Bosanquet, *Knowledge and Reality* (ib., 1885); id., *Logic* (ib., 1888); Edward Caird, *Critical Philosophy of Kant* (ib., 1889); L. T. Hobhouse, *Theory of Knowledge* (ib., 1896); G. T. Ladd, *Philosophy of Knowledge* (New York, 1896); B. P. Bowne, *Theory of Thought and Knowledge* (ib., 1897); Bradley, *Appearance and Reality* (2d ed., London, 1897); James Ward, *Naturalism and Agnosticism* (ib., 1899); Karl Pearson, *Grammar of Science* (2d ed., ib., 1900); A. T. Ormond, *Foundations of Knowledge* (New York, 1901); John Dewey, *Studies in Logical Theory* (Chicago, 1903); J. H. Hyslop, *Problems of Philosophy, or Principles of Epistemology and Metaphysics* (New York, 1905); J. I. Beare, *Greek Theories of*

Elementary Cognition from Alomson to Aristotle (Oxford, 1906); William James, *Pragmatism* (New York, 1907); id., *Meaning of Truth* (ib., 1909); Ernst Cassirer, *Substanzbegriff und Funktionsbegriff* (Berlin, 1910); William James, *Essays in Radical Empiricism* (New York, 1910); Henri Bergson, *Creative Evolution* (ib., 1911); William James, *Some Problems of Philosophy* (ib., 1911); John Dewey, *Influence of Darwin* (ib., 1912); Holt and others, *The New Realism* (ib., 1912). See BERGSON; BERKELEY; DESCARTES; GREEN, T. H.; HEGEL; HUME; INSTRUMENTALISM; JUDGMENT; KANT; LEIBNITZ; LOCKE; LOGIC; PRAGMATISM; REALISM; SPINOZA.

KNOWLES, ELLA. See HASKELL, E. K.

KNOWLES, nōlz, JAMES SHERIDAN (1784-1862). A British dramatist, the author of *Virginius*, *The Hunchback*, and other well-known plays. He was the son of James Knowles, a teacher of elocution, author of a *Dictionary of the English Language*, and cousin of Richard Brinsley Sheridan. Born May 12, 1784, at Cork, where his father had a school, he went with the family in 1793 to London and there received his education. After holding for some time a commission in the militia and preparing himself to practice medicine, he became an actor and appeared in Dublin as Hamlet, but he never attained much eminence in his profession. Subsequently he lived for several years in Belfast and Glasgow as a teacher of elocution, and at this period he made the collection of *The Elocutionist*, which has been many times republished (28th ed., London, 1883). At this time also he laid the foundation of his fame as a dramatist. His *Casus Gracchus* was first performed at Belfast in 1815. *Virginius*, which followed, was afterward recast for the London stage, where Macready took the principal part. Knowles wrote over a dozen other plays, but none of his productions exhibited great genius; they are, however, among the best "acting plays" produced by an Englishman in modern times. Besides *The Hunchback* (1832), two of his most popular plays have been *The Wife* (1833) and *The Love Chase* (1837). About the year 1845 he left the stage from religious scruples, joined the Baptists, and distinguished himself as a preacher. In 1851 he published a little controversial work, *The Idol Demolished by his own Priest*, in answer to Cardinal Wiseman's lectures on transubstantiation. Knowles died at Torquay, Nov. 30, 1862. Among his publications were two novels, and *Lectures on Dramatic Literature*, some of which have been reprinted. A new edition of his *Dramatic Works* appeared in London in 1873. Consult his *Life*, written by his son, privately printed (London, 1872); Macready, *Reminiscences* (New York, 1875); Marston, *Our Recent Actors* (London, 1890).

KNOWLES, LUCIUS JAMES (1819-84). An American inventor, born at Hardwick, Mass. While clerk in a shop at Shrewsbury, he carried on numerous mechanical experiments, in the course of which he invented the steam-boiler safety feed regulator known by his name. He also studied photography, then recently discovered, and for two years manufactured photographic materials and machinery. At Spencer in 1847-49, and later at Warren, he conducted the manufacture of cotton warps, but from 1850 was concerned principally with his inventions. He constructed a steam pump, the manu-

facture of which was so successful that the Knowles pump works, later acquired by the Blake Company of Boston, became the largest of the sort in the United States. A tape-binding loom was also manufactured by him under various patents. He was elected to the Massachusetts Legislature as a member of the Assembly in 1862 and 1865 and of the Senate in 1869.

KNOWLES, ROBERT EDWARD (1868-). A Canadian clergyman and novelist. He was born at Maxville, Ontario, and was educated at Manitoba College, Winnipeg, and at Queen's University, Kingston. In 1891 he was ordained a Presbyterian minister. In 1891-98 he was pastor of the Stewart Presbyterian Church, Ottawa, and in 1898 became pastor of Knox Church, Galt. He published the following novels: *St. Outhbert's* (1905); *The Undertow* (1906); *The Dawn of Shanty Bay* (1907); *The Web of Time* (1908); *The Attic Guest* (1909); *The Handicap* (1910); *The Singer of the Kootenay* (1911).

KNOWLTON, nōl'tūn, FRANK HALL (1860-). An American botanist and paleontologist, born at Brandon, Vt. He graduated B.S. from Middlebury College in 1884 and M.S. in 1887 and in 1896 took the degree of Ph.D. at Columbian (now George Washington) University, where he had been professor of botany for the nine preceding years. From 1884 to 1900 he was connected with the National Museum in the departments of botany and paleontology, in 1900-07 he was paleontologist of the United States Geological Survey, and thereafter was geologist. The *Plant World*, which he had founded in 1897, he edited until 1904. He was a contributor to the *Century*, *Standard*, and *Webster's* dictionaries and to the Jewish *Encyclopædia*. In 1910 he served as vice president of the Paleontological Society of America. His writings include: *Fossil Wood and Lignite of the Potomac Formation* (1889); *Fossil Flora of Alaska* (1894), *Catalogue of the Cretaceous and Tertiary Plants of North America* (1898); *Fossil Flora of the Yellowstone National Park* (1899); *Flora of the Montana Formation* (1900); *Fossil Flora of the John Day Basin* (1902); *Birds of the World* (1909).

KNOWLTON, THOMAS (1740-76). An American soldier, born at Ashford, Conn. He served during the French and Indian War in Putnam's Rangers, rising to the rank of lieutenant, and in 1762 joined the expedition which captured the city of Havana. Two years afterward he took part in an Indian campaign under General Bradstreet and then retired to his farm at Ashford, where he remained until the outbreak of the Revolution, when he led a company of Connecticut militia to Boston, the first troops from another Colony to come to the aid of Massachusetts. He bore a conspicuous part in the battle of Bunker Hill, where his men formed the left wing of the American forces, and for his services on this occasion was promoted to the rank of major. In 1776 he was given the command of a regiment of rangers with the rank of lieutenant colonel and was instrumental in selecting Nathan Hale for the mission which terminated fatally for the spy. On Sept. 16, 1776, anxious to retrieve the reputation of the Connecticut troops which had suffered considerably at Kip's Bay, he led a desperate charge at Harlem Heights and fell mortally wounded. His death aroused the patriots to renewed efforts, and they finally drove the British from

the field. Washington mentioned him the next day in general orders as a soldier of whom "any country in the world might well be proud."

KNOW-NOTHINGS. In American history, a secret political party or society which after 1852 suddenly gained the ascendancy in several States and then as rapidly declined. Its work was closely allied with the movement of the American and Nativist parties, and it aimed, through very stringent naturalization laws, to make politically powerless the large number of immigrants then settling the United States, and through other means to check the growth of foreign influences and ideas. The party also aimed at the political proscription of the Roman Catholics. A decade earlier the American party had shown strength in New York City, and after the Democratic victory of 1843, which resulted in many local offices being given to the foreign born, the native Americans carried the city election of April, 1844, and that of Boston in 1845. In the fall of the same year both New York and Philadelphia gave Nativist majorities, but three years later the party had disappeared in the former city. The Twenty-ninth Congress had six Nativist members, while the Thirtieth had only one. The Irish famine and the revolutionary movements in Europe during 1848 and 1849, with the reaction thereafter, occasioned a greatly increased immigration and caused a reappearance of the Nativist movement in the form of a secret society variously known as the Sons of '76 or the Supreme Order of the Star Spangled Banner, which was primarily opposed to immigration and the spread of Catholicism in America, and the members of which, upon being questioned about their order, uniformly replied "I don't know." The party which came to be organized, and which from the above circumstance was popularly called the Know-Nothing party, conducted its work in profound secrecy, holding secret conventions and often so casting its vote as to make it an indeterminate quantity in many elections. In the State elections of 1854 the party carried Massachusetts and Delaware. In New York it polled more than 120,000 votes—one fourth the entire vote of the State and two-fifths of that of Pennsylvania. In 1855 it was successful in three New England States and in New York, Kentucky, and California. Its strength was due in no small measure to the dissolution of the Whig party. Efforts were made, by means of the questions raised by this movement, to supersede the antislavery agitation, which was then rapidly increasing, but in 1856 the latter obscured the former, and many Know-Nothings joined with the Republicans in supporting Fremont for the presidency. The party, however, held a "secret grand council" on Feb. 19, 1856, at which a platform was adopted including a proposition for a 21 years' residence qualification for naturalization. On February 22 an open convention was held, which some 227 delegates attended, and by this convention Millard Fillmore was nominated for the presidency and A. J. Donelson, of Tennessee, for the vice presidency, these nominations being later adopted by the remnant of the Whigs. The delegates from the States of the North refused to be bound by the vote of this convention, and Fremont became the candidate for the presidency of the so-called North Americans, as well as of the Republicans. In the early State elections, in the fall of 1856, the party succeeded in electing governors of Rhode Island

and New Hampshire, but in the presidential election there was a great decrease in the party's vote, many of its members voting the Republican ticket. The party secured only eight electoral votes, those of Maryland. In 1857 it carried Rhode Island and Maryland, but by 1860 had entirely disappeared. Consult: Schmecke-bier, *Know Nothing Party in Maryland* (Baltimore, 1899); Sisco, *Political Nativism in New York State* (New York, 1901); Woodburn, *Political Parties* (ib., 1903); Desmond, *The Know Nothing Party* (Washington, 1908).

KNOX, GEORGE WILLIAMS (1853-1912). An American Presbyterian theologian and writer, born at Rome, N. Y. He graduated from Hamilton College in 1874 and from Auburn Theological Seminary in 1877. After ordination he went as a missionary to Japan. For a time he was professor of homiletics at the Union Theological Seminary in Tokyo and professor of philosophy and ethics at the Imperial University of Japan. After returning to the United States he was pastor at Rye, N. Y. At Union Theological Seminary, New York, he lectured on apologetics in 1897-99 and was thereafter professor of philosophy and the history of religion. He published in Japanese: *A Brief System of Theology; Outlines of Homiletics; The Basis of Ethics; The Mystery of Life*; and in English: *A Japanese Philosopher* (1893), *The Christian Point of View* (1902), with Francis Brown and A. C. McGiffert; *The Direct and Fundamental Proofs of the Christian Religion* (1903, 1908); *Japanese Life in Town and Country* (1904); *Imperial Japan* (1905); *The Spirit of the Orient* (1906); *The Development of Religion in Japan* (1907); *The Gospel of Jesus* (1909). He contributed articles to the NEW INTERNATIONAL ENCYCLOPEDIA.

KNOX, HENRY (1750-1806). An American soldier, prominent in the Revolutionary War. He was born in Boston, where he was engaged in business as a bookseller from 1770 to 1775. He entered the Continental army immediately after the battle of Lexington, served as aid to General Ward at the battle of Bunker Hill and during the siege of Boston, and distinguished himself by procuring from Lake George and the Canadian frontier a large number of cannon, which were used by Washington in fortifying Dorchester Heights. For this he was made a brigadier general of artillery by Congress. At Trenton and Princeton he served with great distinction and was prominent in the battles of Brandywine, Germantown, and Monmouth and at Yorktown. He became major general in 1781, was one of the commissioners appointed in 1782 to negotiate the exchange of prisoners, and in 1783 was delegated by Washington to receive the surrender of New York. From December, 1783, until June, 1784, he was the senior officer of the United States army. From 1785 to 1795 he was Secretary of War, having charge for a time of the Navy Department as well, and then removed first to St. Georges and later to Thomaston, Me., where he died. Knox was not a man of great ability, though he seems to have possessed the entire confidence of Washington. As an officer, he was conspicuous for his bravery, his skill in handling artillery, and his tireless energy. Consult Drake, *Life and Correspondence of Henry Knox* (Boston, 1873); and Brooks, *Henry Knox: A Soldier of the Revolution*, in the "American Men of Energy Series" (New York, 1900).

KNOX, JOHN (1505 or 1513-72). The great Scottish reformer. He was born at Giffordgate, Haddington, or at Morham, the district adjoining, about 25 miles east of Edinburgh. He received his early education at the grammar school of Haddington. If he was born in 1505 and went to the University of Glasgow in 1522, where records show a John Knox matriculated, he was for a short time a pupil there of John Major (q.v.). It is only certain that he was not a graduate of either Glasgow or St. Andrews. He is mentioned as apostolical notary in the diocese of St. Andrews in March, 1543. In 1544 he was living as a tutor in Longniddry House, 3 miles west of Haddington. Thereafter he emerges from obscurity. He must already have embraced Protestantism, for he now appears as the companion of George Wishart (q.v.). While the latter prosecuted his career as a preacher in East Lothian, Knox waited upon him, bearing before him, he tells us, a "two-handed sword." He was ready to defend his friend at the peril of his own life, but the latter dismissed him. After Wishart's seizure and death (March, 1546), he returned to the charge of his pupils. On May 29, 1546, Cardinal Beaton (q.v.) was murdered in his castle of St. Andrews in revenge for Wishart's execution. The castle was taken possession of by the band which had accomplished the audacious design and became the temporary stronghold of the reforming interest. Knox took refuge there with his two pupils. Here his gifts as a preacher were first recognized, and the parish church of St. Andrews resounded with his voice in denunciation of "popery." His career at this time, however, was cut short by the surrender of the fortress (July 31, 1547) and his capture. For 19 months he was a galley slave and during the winter of 1547-48 was kept at Nantes. At the request of Edward VI he and others were released in February, 1549, and allowed to depart for England, where he resided till early in 1554. He was appointed one of Edward VI's chaplains and lived on terms of intimate intercourse with Cranmer and other English reformers. He had considerable influence on the course of the English Reformation, especially in regard to the liberal changes introduced into the service and Prayer Book of the Church of England at the close of Edward's reign. He preached in a number of places—at Berwick, on the Scottish border (1549-51), Newcastle (1551-53), and in London and the south. Probably in 1553 he married Margery Bowes. The accession of Mary drove him and others to the Continent. He settled temporarily at Dieppe (January, 1554), whence he wrote *A Godly Letter Sent to the Faithful in London, Newcastle, and Berwick*, and a pamphlet, *A Faithful Admonition to the Professors of God's Faith in England*. He went to Geneva and then to Frankfort-on-the-Main, where he participated in the "Frankfort troubles," certain disputes as to the use of King Edward's service book in the congregation of English Protestants there. In 1555 he visited Scotland and remained there for some months. Then he accepted a call from the English Church at Geneva and was settled as pastor for nearly three years—among the quietest and probably the happiest years of his life. Thence he issued his famous *First Blast of the Trumpet against the Monstrous Regiment of Women* (i.e., Queen Mary of England, Mary of Guise, and her daughter, Mary Stuart).

Queen Elizabeth, taking offense at this work, refused to allow him to pass through England when recalled to Scotland.

Knox returned to Scotland in May, 1559, and entered upon his triumphant course as a reformer. Political necessities had driven the Queen Regent (Mary of Guise, q.v.) to temporize with the "lords of the congregation" or the reforming nobles. Having somewhat re-established her power, she sought to withdraw her concessions (May, 1559); but the reforming impulse had gathered a strength that could no longer be resisted. The heads of the party, assembling at Dundee, under Erskine of Dun, proceeded to Perth. There the pent-up enthusiasm which had been long collecting was roused into furious action by a sermon of Knox on the idolatry of the mass and of image worship (July, 1559). A riot ensued. The "rascal multitude," as Knox himself called them, broke all bounds and destroyed the churches and monasteries. Similar disturbances followed at Stirling, Lindores, St. Andrews, and elsewhere. The flame of religious revolution was kindled throughout the country, aggravating the civil war already raging. At length the assistance of Elizabeth and the death of the Queen Regent (June, 1560) brought matters to a crisis; a truce was proclaimed, and a free Parliament summoned to settle differences. The result of the Parliament, which met in August, 1560, was the overthrow of the old religion, and the establishment of the Reformed Kirk in Scotland. In all this Knox was not only an active agent, but the agent above all others. The original *Confession of Faith* of the Reformed Kirk and the *First Book of Discipline* bear the impress of his mind.

The arrival of the youthful Queen Mary, in the course of 1561, brought many forebodings to the reformer; he apprehended dangers to the reformed cause from her character and her well-known devotion to the Catholic church. The reformer's apprehensions scarcely permitted him to be a fair, certainly not a tolerant, judge of Mary's conduct. She summoned him into her presence, and Knox relates, with a somewhat harsh bitterness, his several interviews with her. At length he came to an open rupture with the Queen's party, including Murray and Maitland, and many of his former friends. He took up an attitude of unyielding opposition to the court and in his sermons and prayers indulged freely in the expression of his feelings. The result was his temporary alienation from the more moderate Protestant party, who tried to govern the country in the Queen's name, and for a while, from 1563 to 1565, he retired into comparative privacy. In 1560 his first wife had died, and on Palm Sunday, 1564, he married Margaret Stewart, daughter of Lord Stewart of Ochiltree, a girl of 16.

The rapid series of events which followed Mary's marriage with Darnley served once more to bring Knox into the field. He was reconciled with Murray and strongly abetted him in all his schemes of policy during his regency. Further reforms were effected by the Parliament which convened under his sway in the close of 1567. Some provision, although still an imperfect one, was made for the support of the Protestant clergy. Knox seemed at length to see his great work accomplished and is said to have entertained the idea of retiring to Geneva. But the bright prospect on which he gazed for a

little was soon overcast—Murray's assassination (Jan. 23, 1570) and the confusion and discord which sprang out of it plunged the reformer into profound grief. He once more became an object of suspicion and hostility to the dominant nobles, and misunderstandings even sprang up between him and some of his brethren in the General Assembly. He retired to St. Andrews (1571) for a while, to escape the danger of assassination, with which he had been threatened. There, although suffering from extreme debility, he roused himself to preach once more, and, in the parish church where he had begun his ministry, made his voice heard again with something of its old power. Assisted by his servant, the "good, godly Richard Ballenden," into the pulpit, "he behoved to lean upon it at his first entry; but ere he was done with his sermon, he was so active and vigorous that he was lyke to ding the pulpit in blads and fle out of it." In the end of 1572 he returned to Edinburgh to die; his strength was exhausted; he was "weary of the world," he said; and on November 24 he died.

Knox's character was distinguished by firmness and decision, and a plain, severely harsh sense of reality. He was a man of strong and even stern convictions, and he felt no scruples and recognized no dangers in carrying out his aims. He was shrewd, penetrating, inevitable in his perceptions and purposes, and his language is always plain, homely, and often harsh. He had learned, he himself says, "to call wickedness by its own terms—a fig, a fig; a spade, a spade." Above all, he was fearless; nothing daunted him; his spirit rose high in the midst of danger. In Scotland Knox was the leading spirit in the Reformation. To him, above all others, may be attributed this result. His violent methods and his mediæval type of thought are natural in a man of that age with his temperament.

Knox wrote his own biography in his *History of the Reformation of Religion in the Realme of Scotland*, begun about 1560 and covering the history as far as 1564. The fifth book was compiled from his notes after his death. The first three books were printed in London in 1584; the entire five in 1664; the "modernized" edition by Guthrie (London, 1898) is abridged and incomplete. His *Works* have been well edited by Laing (Edinburgh, 1846-64), and his life written by M'Crie (Edinburgh, 1811; 7th ed., 1872). Both Laing and M'Crie give full bibliographical data concerning his writings. Consult his life by P. H. Brown (London, 1895); Carrick, *John Knox and his Land* (Glasgow, 1902); James Stalker, *J. Knox: His Ideas and Ideals* (New York, 1904); Cowan, *John Knox* (ib., 1905); Andrew Lang, *J. Knox and the Reformation* (London, 1905); Crook, *John Knox* (New York, 1906); J. S. Rait, "John Knox and the Scottish Reformation," in *Quarterly Review*, vol. ccv (London, 1906); A. B. Hart, "John Knox as a Man of the World," in *American Historical Review*, vol. xiii (Lancaster, Pa., 1908). Knox's liturgy, *The Book of Common Order of the Church of Scotland*, has been edited by Sprott (London, 1901).

KNOX, JOHN JAY (1828-92). An American financier, born in Knoxboro, N. Y. He graduated at Hamilton College in 1849 and entered the banking business. Because of his vigorous support of the national banking plan of Secre-

tary Chase, he was given a position in the Treasury Department in 1866, serving as Deputy Comptroller of the Treasury from 1867 to 1872. From 1872 until 1884 he held the position of Comptroller of the Treasury. In the latter year he resigned in order to become president of the National Bank of the Republic, of New York City, which position he filled until his death.

In 1870 he prepared a bill codifying the mint and coinage laws, and a report on the subject of coinage. The bill was transmitted to Congress by Secretary Boutwell and with few amendments became law in 1873. This was the famous Coinage Act of 1873, which dropped the silver dollar from the coinage (See MONEY.) Mr. Knox was the author of numerous reports and articles and of a book on the *United States Notes* (New York, 1887).

KNOX, PHILANDER CHASE (1853-). An American lawyer and statesman, born at Brownsville, Fayette Co., Pa. He graduated from Mount Union College (Ohio) in 1872 and studied law in the office of H. B. Swope, of Pittsburgh. He was admitted to the bar in 1875 and in the next year was made assistant United States district attorney for the western district of Pennsylvania. From 1877 to 1902 he was in partnership with James H. Reed. The firm of Knox and Reed almost immediately established a lucrative practice, representing such corporations as the Carnegie Steel Company, but its clients were not limited to corporations. Knox became familiar with the organization of great industrial combinations and established a reputation for legal ability of a very high order. In 1897 he was tendered the appointment as Attorney-General in the cabinet of President McKinley, but he declined to leave his practice. In 1901, however, on the resignation of John W. Griggs, the offer was renewed and this time was accepted. He was continued in office under President Roosevelt. Although criticized because of alleged inactivity in prosecuting corporations and trusts supposed to be doing business in contravention of the Sherman Anti-Trust Act, he was more active in this regard than any of his predecessors. Under his administration suits were undertaken against the Northern Securities Company and the so-called Beef Trust. Also, while Attorney-General, he made a report to Congress (Sen. Doc. 73, 57th Cong., 2d Sess.) which was an exceedingly thorough and painstaking exposition of law regarding trusts and unlawful combinations. His administration was generally thought efficient and able. In 1904 he was appointed by Governor Pennypacker of Pennsylvania to fill the unexpired term of Senator Quay, and in the following year was elected for a regular term. As Senator, he served on the Judiciary Committee and took a prominent part in the debates concerning the Panama Canal. For a portion of the time he was chairman of the "steering committee." In 1906 he was put forward as the favorite son of Pennsylvania for the Republican nomination for President and received considerable attention throughout the country. After the election of Taft he was offered the position of Secretary of State, which he accepted. In this office Knox was not considered to be so conspicuously successful as he had been as Attorney-General; but during his incumbency many important diplomatic matters were handled, such as American relations with

Japan and the South American states. In 1912 Knox made a tour of the Latin-American countries with the avowed purpose of fostering a closer and more cordial commercial and political relationship between them and the United States. Everywhere he was warmly received and lavishly entertained. In 1913 he retired from public life to take up again his legal practice. He was the author of *Future of Commerce* (1908); *International Unity* (1910); *Speeches* (1912), made during his Latin-American tour.

KNOX, ROBERT (c 1640-1720). The first English writer on Ceylon. He was a prisoner there among the natives from 1659 to 1679, the ship on which he and his father were homeward bound from India having put into Cottiar Bay for safety in a storm. Robert Knox, senior, a Scottish employee of the East India Company, died after three years' captivity; but his son finally made his escape from the interior of the island to a Dutch colony on the coast, whence he reached England (1680). As mate or master of vessels, Knox made later voyages to India and the South Seas, but he is chiefly noted for *An Historical Relation of the Island of Ceylon in the East Indies, Together With an Account of the Detaining in Captivity the Author and Diverse Other Englishmen Now Living There, and of the Author's Miraculous Escape. Illustrated with Figures and a Map of the Island* (London, 1681). This has been translated into French, Dutch, and German.

KNOX, THOMAS WALLACE (1835-96). An American journalist and traveler, born in Pembroke, N. H. He was educated there and in Pittsfield, taught for a time in Kingston, N. H., but went gold hunting in 1860, to Colorado, where he entered into journalistic work. He was a correspondent during the Civil War and also saw active service. He traveled round the world as a special correspondent, in 1866 and again in 1877, and his varied experiences formed the basis for his numerous works. They include: *Camp-Fire and Cotton Field* (1865); *Overland through Asia* (1870); *Underground Life* (1873); *Backsheesh* (1875); *Voyage of the "Vivian" to the North Pole* (1884); *Robert Fulton and Steam Navigation* (1886); *Life of Henry Ward Beecher* (1887); *Decisive Battles since Waterloo* (1887). A long series of books of travel and adventure, written for young people and deservedly popular, include: *The Young Nimrods in North America* (1881), *The Boy Travellers in South America* (1885), and *The Boy Travellers in the Russian Empire*.

KNOX, WILLIAM (1732-1810). A British official and pamphleteer, born in Ireland. At the age of 25 he was sent to Georgia as provost marshal under Governor Ellis and remained there four years. Afterward he was Colonial agent in England for Georgia and East Florida. His defense of the Stamp Act, contained in two pamphlets, written in 1764 and 1765, brought about his dismissal from office, but he was made Undersecretary of State for America (1770-82). He inspired Lord North's attempt at compromise (1776) and was also the instigator of the separation of New Brunswick (Canada) into a distinct province (1784), to be settled by Loyalists from the States. His publications include: *The Controversy between Great Britain and her Colonies Reviewed* (1769); *A Defence of the Quebec Act* (1774); *Considerations on the State of Ireland* (1778); *Merits of the Commercial Treaty with France* (1788);

Considerations on the Present State of the Nation (1789); *Observations upon the Liturgy* (1789); *Considerations on Theocracy* (1796).

KNOX COLLEGE. A coeducational institution of collegiate grade at Galesburg, Ill., chartered in 1837 as the Knox Manual Labor College, in pursuance of a plan adopted in Whites-town, N. Y., in 1836. It was opened in 1841 and was renamed Knox College in 1857. The original plan contemplated the subscription of \$10,000 and the purchase of lands in the Mississippi valley at the government price. The college had, in 1914, 576 students in two departments, a college and a conservatory of music, established in 1883; 34 instructors; and a library of 13,712 volumes. The amount of productive funds, including endowment, is about \$400,000. The institution is undenominational. On its grounds in 1858 was held the Lincoln-Douglas debate, the fortieth anniversary of which was celebrated on Oct. 7, 1898. President McKinley and his cabinet were present and took part in the exercises. The president in 1914 was Thomas McClelland, D.D.

KNOX-LITTLE, WILLIAM JOHN (1839-). An English clergyman of the Established church, born at Stewartstown, County Tyrone, Ireland. He was educated at Trinity College, Cambridge, and after graduation became an assistant master at Sherborne School. Later he held a number of curacies; from 1875 to 1885 was rector of St. Albans, at Cheetwood, Manchester, and thereafter until 1907 vicar of Hoar Cross; and after 1881 was canon of Worcester. During part of the South African War he was acting chaplain to a brigade of Guards and subsequently to the Household Cavalry. Among his publications are: *Meditations on the Three Hours' Agony of Our Blessed Redeemer* (1877); *Characteristics and Motives of the Christian Life* (1880); *The Journey of Life: The Light of Life* (1888); *The Perfect Life* (1899); *Sketches and Studies in South Africa* (1899); *The Warf from the Waves* (1890); *Sketches and Studies in South Africa* (1899); *Holy Matrimony* (1900); *The Conflict of Ideals in the Church of England* (1906).

KNOXVILLE. A city and the county seat of Marion Co., Iowa, 35 miles by rail southeast of Des Moines, on the Chicago, Burlington, and Quincy and the Chicago, Rock Island, and Pacific railroads (Map Iowa, D 3). It has a State Hospital for Inebriates, a Carnegie library, and a fine courthouse. The city carries on a considerable trade as the centre of a farming, stock-raising, and coal-mining district, and has flouring mills, etc. There are municipal water works. Pop., 1900, 3131; 1910, 3190.

KNOXVILLE. A city and the county seat of Knox Co., Tenn., 160 miles east of Nashville, on the Tennessee River, at the head of steam navigation, and on the Southern, the Knoxville and Bristol, the Knoxville, Sevierville, and Eastern, and the Louisville and Nashville railroads (Map: Tennessee, F 3). It has a site of great natural beauty among the foothills of the Clinch Mountains. There are State asylums for the insane and for the deaf and dumb, a fine government building, a city hospital, courthouse, city hall, city market, Lawson McGhee Memorial Library, the building which served as the first capitol of Tennessee, the University of Tennessee (q.v.), the Agricultural College, and Knoxville College (for colored students). Other features of interest are the iron bridge across

the river, Gray Cemetery, Chilhowee Park (where expositions were held in 1910, 1911, and 1913) United States Weather Bureau Station, and the National Cemetery, in which are 3261 graves, 1047 of unknown dead. In commercial importance Knoxville ranks with the chief interior cities of the South. It is located in a productive marble, copper, zinc, coal, and iron region, carries on a large trade in marble and coal, has extensive wholesale interests, and ships considerable agricultural produce. Its manufactures also are important, including furniture, cotton and woolen goods, flour, lumber, foundry products, electric signs, cars and car wheels, wagons, and many other articles. The government is vested in a mayor and four commissioners, the new form having been adopted in 1912. The municipal budget in 1912 balanced at \$1,262,000, the principal items of expense being \$100,000 for schools, \$63,000 for street expenditures, \$75,000 for the fire department, and \$48,000 for the police department. The city's income was \$1,366,000. The water works are owned by the city. Pop., 1880, 9693; 1890, 22,535; 1900, 32,637; 1910, 36,346; 1914 (U. S. est.), 37,924.

Settled in 1787, Knoxville was laid out and named (after Gen. Henry Knox) in 1791 and became organized as a town in 1794. It was the capital of the "Territory South of the Ohio" from 1792 to 1796 and of the State from 1796 to 1811, and again in 1817. During the Civil War it was held by the Confederates until September, 1863, when General Burnside took possession. From November 10 to November 30 a Confederate force besieged it unsuccessfully, and on the 29th made a desperate assault on Fort Sanders, losing about 600 killed and wounded and 300 prisoners. Knoxville was chartered as a city in 1815 and was enlarged in 1888 and 1889 by the addition of West and North Knoxville. Consult L. P. Powell (ed.), *Historic Towns of the Southern States* (New York, 1900), and Rule, Mellen, and Wooldridge, *Standard History of Knoxville, Tennessee* (Chicago, 1900).

KNOXVILLE COLLEGE. An institution for the higher education of colored youth, founded under the auspices of the United Presbyterian church in 1885. Its original site was at East Knoxville, Tenn., but in 1876 it was removed to Knoxville in the same State. The college has classical, scientific, literary, normal, theological, musical, mechanical, agricultural, domestic-science, nurse-training, and common-school departments. The college property consists of 75 acres, on which stand 10 buildings. About 10 acres of this is set apart for the campus. The most important buildings are the Reception Hall, McCulloch Hall, Elnathan Hall, McDill Home, Wallace Hall, McMillan Memorial Chapel, Carnegie Library Building, Mechanical Building, and the Agricultural Building. The enrollment in 1913-14 was 474, and the faculty numbered 18. The college has no endowment, with the exception of \$10,000 for the library. The value of the grounds, including buildings, is \$180,000. The library contains about 5000 volumes. The president in 1914 was Ralph W. McGranahan.

KNUDSEN, knyd'sen, KNUD (1812-95). A Norwegian philologist. He is best known as the leader in the so-called Danish-Norwegian language movement, as opposed to the Norse movement headed by Ivar Aasen (q.v.). His

aim was to give a more Norwegian coloring to the literary language of Norway by adapting the orthography and syntax to Norwegian usage and by substituting wherever possible Norwegian words for foreign derivatives. The most comprehensive treatment of the subject is in his *Unorsk og norsk, eller fremmedords avløsning* (1879-81). While Knudsen was extreme in his views and frequently erred through a lack of thorough philological training, he exercised a decisive influence upon his contemporaries, especially Bjørnstjerne Bjørnson, and the present form of Norwegian Danish is largely the result of his agitation.

KNUDSON, nōōd'son, ALBERT CORNELIUS (1873-). An American Methodist Episcopal theologian, born at Grand Meadow, Minn. He graduated from the University of Minnesota in 1893 and from the Boston School of Theology in 1896, took postgraduate work at Boston in 1896-97, spent a year at Berlin and Jena, and received the degree of Ph.D. from Boston University in 1900. In 1898 he became professor of Church history in Denver University, in 1900 professor of philosophy and the English Bible at Baker University, from 1902 to 1906 was professor of the English Bible and philosophy at Allegheny College, and thereafter was professor of Hebrew and Old Testament exegesis in the Boston School of Theology. He joined the Colorado conference of his church in 1898 and later was transferred to the New England southern conference. He is author of *The Old Testament Problem* (1908) and *Beacon Lights of Prophecy* (1914).

KNUDTZON, knūt'sōn, JORGEN ALEXANDER (1854-). A Norwegian Semitic scholar, born in Trondhjem and educated at Christiania, Berlin, Leipzig, London, and Paris. In 1907 he became professor of Semitic languages at the University of Christiania. He traveled extensively in Egypt, Palestine, and Asia Minor. Besides articles in *Zeitschrift für die Kunde des Semitischen* and other journals on Semitic grammar, especially the use of tenses, he published *Assyrische Gebete an den Sonnengott* (1893), *Die zwei Arzawa-briefe* (1902), and *Die El-Amarna-tafeln* (1908).

KNURR (nūr) AND **SPELL** (knur, nur, ODutch knorre, Dutch knor, MHG. knorie, Ger. Knorren, knob, and spell, from Dutch spil, spindle). A game which originated on the moors of Yorkshire and is still played chiefly in that locality and the neighboring Lancashire. It has been called collier's golf. It is played with a pommel or club, and a knurr or ball, which is mechanically released from the spell or trap by a spring, somewhat after the manner of the shooter's clay pigeon. Each player plays his own game, without interference, and any number can enter a competition. The knurr is of boxwood or porcelain (called a pottie), the regulation weight being half an ounce and the size about an inch in diameter. It is placed on the spell or trap by the player, who, by means of a thumbscrew, adjusts the spring of the trap according to the velocity at which he wants the ball released. He then releases it and hits the ball on the rise with his pommel, a stick or stout cane varying from 4 to 5 feet in length. It has a flat, hardwood, oblong-square end. The upper end of the pommel, which the player grasps with both hands, is bound with waxed thread, like the handle of a cricket bat, and the blow is made by striking the ball with all possible force. The longest hit or series of hits

wins. In ordinary contests, hits of from 150 to 200 yards are common, and there are records of 300 yards, 14 feet with a pottie, and 360 yards, 37 feet, 8 inches with a wooden knurr. These very long strokes are, however, usually due in part to favoring wind. On a large moor and where the game is general, the ground is marked out with wooden pins driven in every 20 yards. In matches each player takes his own knurrs and pommels and has five rises of the ball to a game. The stroke is made by a full swing round the head, not unlike the drive at golf.

KNUT, knøt, or **CNUT**. A king of England, Denmark, and Norway. See **CANUTE**.

KNUTSFORD, nūts'fōrd, **HENRY THURSTAN HOLLAND**, first VISCOUNT (1825-1914). An English statesman. He was born in London; was educated at Harrow, at Durham University, and at Trinity College, Cambridge; and was admitted to the bar in 1849. He served as legal adviser to the Colonial Office (1867) and as Assistant Undersecretary from 1870 till 1874, when he was elected to Parliament for Midhurst. From 1885 to 1888 he represented Hampstead. He served also as Financial Secretary to the Treasury (1885), Vice President of the Council on Education (1885, 1886-87), and Secretary of State for the Colonies (1887-92). He was made Baron in 1888 and Viscount in 1895. His publications include *Notes on Common-Law Procedure Acts* (1852-54).

KNYPHAUSEN, knip'hou-zen, **WILHELM, BARON VON** (1716-1800). A German soldier, born at Lützelburg (now Luxemburg). He entered the Prussian military service, distinguished himself under Frederick the Great, and became lieutenant general in 1775. In 1776 he came to America in command of the Second Division of Hessian troops. In 1777 he became commander in chief of all the Hessian forces. He took part in the battle of White Plains. He showed great bravery in the capture of Fort Washington, which was renamed in his honor. He was in the battles of Brandywine, Germantown, and Monmouth. During the absence of Sir Henry Clinton (1779-80) he was in command of the city of New York and during this time made a raid into New Jersey and plundered Hackensack. Later he was in the expedition which burned Springfield, N. J. He was an able soldier and after his return to Germany he was made military governor of Cassel.

KOALA, kô-ā'la (Australian name), or **NATIVE BEAR**. An Australian-marsupial (*Phascolarctos cinereus*), regarded as the type of the family Phascolarctidae or as forming a subfamily of the Phalangeridae. It closely resembles the phalangers in dentition, but has the molar teeth much larger. The toes of the forefeet are in two opposable groups of two and three, a character not found in any other quadruped, but well adapted to grasping the branches of trees, on which the koala often hangs with its back undermost like the sloth, which it also resembles in its lethargy. There is scarcely any rudiment of a tail. The general form is not unlike that of a young bear. (Cf. **WOMBAT**.) The female has but one cub at a time, which she carries on her back for a long time after it is capable of leaving her pouch. The koala is rather more



TEETH OF KOALA.

than 2 feet long, and the body is stout and clumsy. The covering is a very dense coat of short gray wool. The animal has no means of defense and is killed with clubs by the natives of Australia, where it is found. It is nocturnal in its habits and feeds exclusively on eucalyptus leaves. In *Marsupials and Monotremes*, W. Saville-Kent, writing of the group of which the Australian native bear is the head, describes the species as an "essentially droll and in many respects abnormal form. . . . Its little podgy tailless body, short thick-set head, and round tufted ears lend some countenance perhaps to the ursine analogy; but there the likeness ends." See Colored Plate of **MARSUPIALS** and Plate of **PHALANGERS**.

KOB. See **WATER BUCK**.

KOBÉ, kôb'bâ, **GUSTAV** (1857-). An American music critic and author, born in New York. When 10 years old, he was sent to Wiesbaden, Germany, to study composition and the piano with Adolf Hagen. After five years with that teacher he completed his musical studies with Mosenthal in New York and in 1877 graduated from Columbia College and two years later from Columbia Law School. He wrote for newspapers, becoming music critic of the *New York Herald*, and for magazines, contributed to the first edition of the *NEW INTERNATIONAL ENCYCLOPEDIA*, and published: *The Ring of the Nibelung* (1889); *Wagner's Life and Works* (2 vols., 1890); *New York and its Environs* (1891); *Plays for Amateurs* (1892); *My Rosary, and Other Poems* (1896); *Miriam* (1898); *Wagner's Music-Dramas Analyzed* (1904), with which were later combined his other Wagner books; *Opera Singers* (1905; 6th ed., rev., 1913); *Famous American Songs* (1906); *Portrait Gallery of Great Composers* (1911).

KOB'DO. A plateau of western Mongolia, 4000 feet above the level of the sea; also the chief town of that region (Map: China, F 2). The town lies north of the eastern branch of the Tien Shan, or Celestial Mountains, about 40 miles from the frontier of Sungaria. It is inhabited chiefly by Kalmucks, by whom, as well as by the Mongols and Russians, it is called Sankinhoto. It is supposed to be the Chingintalas of Marco Polo. It suffered much during the Dungan Rebellion of 1865, but is recovering and now sends great flocks of sheep to Kansu every year. There is also a small trade with Russia. Kobdo has an open trading quarter and a group of government buildings inclosed by a mud wall. Pop., about 6000, including about 1600 garrison troops.

KOBE, kô'bâ. A seaport of Japan, in the southern part of the island of Hondo, adjoining and lying to the northeast of the prefectural city of Hiogo, on the west shore of the bay of Osaka, and distant 22 miles by rail from the city of Osaka (Map: Japan, D 6). When Hiogo was opened in 1868 to foreign residence and trade, Kobe became the foreign residential quarter and the centre of trade, its municipal affairs being managed by a council consisting of the prefect, the foreign consuls, and three elected members. It continued to be a separate town until 1892, when it was united with Hiogo. The city is situated along a fine sandy beach, at the base of a high coast range, and at the entrance to the far-famed Inland Sea. It has a deep and safe harbor and is connected by rail with all parts of the Hondo, or main island. It is in

direct steam communication with China, Formosa, Hongkong, Australia, Europe, and America, as well as with the other treaty ports. It has docks, railway shops, a fine wharf 450 feet long for ocean-going vessels, an Imperial ship-building yard (with patent slip accommodating vessels of 2000 tons' burden), a paper mill, and other manufactures, two foreign banks, two foreign and several native newspapers, hotels, churches, and clubs. It is within easy distance of Osaka, Kyoto, and numerous places of picturesque beauty and historic interest; it is considered the most attractive of the treaty ports, as it probably is the most healthful. The bund or water front of the settlement is faced with stone; the streets are wide, well kept, and lighted by electricity. Though opened much later than Nagasaki and Yokohama, Kobe has now taken first place in shipping as in volume of trade. In 1913 the value of the foreign trade was \$172,611,271 for imports and \$84,894,079 for exports. In 1913 about 2800 vessels (7,100,000 tons) entered port, by far the largest number being British. Pop., 1898, 215,780; 1908, 378,197.

KOBELL. A German family of painters, engravers, and etchers, all descended from Johann Heinrich Kobell, of Frankfurt, who settled at Mannheim in 1720.—His grandson FERDINAND (1740–99), a landscape painter and etcher, was born at Mannheim, where, after studying at the University of Heidelberg, he became the pupil of Peter Verschaefelt. In 1768–69 he continued his studies in Paris, after his return was appointed court painter and later professor at the Academy, and in 1793 removed to Munich. His oil paintings, in the style of Berchem, are represented in the galleries of Karlsruhe, Darmstadt, Stuttgart, and Augsburg, but he is more important as an etcher, his 242 plates marking a distinct advance in the treatment of landscape etching in Germany. Consult his biography by Baron Stengel (Nuremberg, 1822).—His brother FRANZ (1749–1822), landscape and architectural painter and draftsman, was born in Mannheim, where he studied at the Academy before spending nine years in Italy (1776–85), chiefly at Rome. On his return he settled in Munich and was made court painter. His oil paintings, on which Goethe bestowed high praise, are rare, numbering scarcely a dozen, one of the finest being a "Rocky Landscape with Waterfalls," in the Bamberg Gallery. Endowed with an exuberant fancy and extraordinary facility of production, he afterward confined himself entirely to drawings, of which he is said to have produced more than 10,000.—HENDRIK (1751–99), a marine and landscape painter, born at Rotterdam, cousin of Ferdinand and Franz, studied in Amsterdam under Jacob de Vos and Cornelis Ploos van Amstel. He settled afterward at Rotterdam and is especially esteemed for his marine subjects in oil and his numerous drawings executed with the pen, heightened with India ink, and his water colors.—JAN (1756–1833), engraver, born at Rotterdam, brother of Hendrik, engraved anatomical plates and in 1787 a series of historical portraits.—JAN, the elder (1778–1814), animal and landscape painter and etcher, was the son of Hendrik and a pupil of Willem Rutgaert van der Wall at Utrecht. He studied diligently from nature and took Paul Potter for his model. In 1812 he went to Paris, where he won the gold medal and high praise from

art critics. His popularity increased rapidly until his premature death, at Amsterdam. Of his cattle pieces, remarkable for their sterling technique and precision of drawing, there are good specimens in the museums of Amsterdam and Rotterdam.—JAN, the younger (1800–38), landscape and cattle painter, born at Rotterdam, son of Jan the engraver, pupil of Rotterdam Academy, painted his principal work, a life-size cattle piece, in 1830.—His sister ANNA (1795–1847) was also an esteemed artist.—WILHELM VON KOBELL (1766–1855), landscape and battle painter and etcher, born at Mannheim, son and pupil of Ferdinand; studied afterward the works of the old Dutch masters in the Düsseldorf Gallery and was especially attracted by Wouverman. In 1778 he went to Rome, was made court painter at Mannheim after his return, and afterward followed his father to Munich, where he became professor at the Academy in 1808. He painted at first landscapes, rural genre scenes, and animal pieces, of which the galleries of Bamberg, Weimar, Mannheim, Karlsruhe, Berlin, Darmstadt, Frankfurt, and Wiesbaden contain fine specimens. In 1809 he visited Vienna, and in 1810 Paris, to make studies for his battle pieces, which contain many portraits of famous contemporaries. The New Pinakothek in Munich contains "The Third Day of the Battle of Hanau" (1808) and the Banquet Hall of the Königsbau the "Surrender of Brieg," "Cavalry Skirmish at Arnhofen," and the "Battles of Eckmühl and Wagram." He became most widely known through his etchings and aquatint engravings after Wouverman, Berchem, Roos, Ruysdael, and others, in which he reproduced the peculiar style of each master with uncommon success.

KOBELL, FRANZ VON (1803–82). A German mineralogist and poet, born in Munich and educated at Landshut. He became professor of mineralogy in Munich in 1826 and in 1849 was appointed first curator of the state collection of minerals. To mineralogy his greatest contributions were new methods in crystallography and the valuable invention of the stauroscope to determine the optical properties of a crystal. His scientific publications include: *Charakteristik der Mineralien* (1830–31); *Skizzen aus dem Steinreich* (1850); *Mineralogie: Populäre Vorträge* (1862); and, above all, the *Tabellen zur Bestimmung der Mineralien* (1833, 16th ed., 1912); *Galvanographie* (1842; 2d ed., 1846), describing a method of his own invention; and *Geschichte der Mineralogie* (1864). Kobell's popular poetry, in the dialects of Upper Bavaria and of the Palatinate, shows true humor and the possession of rich fancy. Among the works of this class mention should be made of *Schnadahupfn und Spruchln* (2d ed., 1852), *Gedichte in pfälzischer Mundart* (1839–41), *Jagd- und Weinlieder* (1899). Consult Luise von Kobell, *Franz von Kobell* (Munich, 1884).

KÖBERLE, KEBERLE, GEORG (1819–98). A German author and dramatist, born at Nonnenhorn. He studied at the Gymnasium at Augsburg, was sent to the Jesuit Collegium Germanicum at Rome, but ran away from that institution and studied philosophy and law at Munich. At Leipzig (1846) he published his *Aufzeichnungen eines Jesuitenzöglings im deutschen Kolleg in Rom*, which created a sensation, and which he followed up (1870) with *Deutsche Antwort auf welsche Projekte: Enthüllungen über die Palastrevolution im Vatikan*. He is better

KOCH, JOHAN PETER (1870-). A Danish captain and explorer of the Arctic dependencies of Denmark, born at Vestenskov. He participated in Amdrup's expedition to east Greenland in 1900 and was one of the general staff of the surveying expeditions to Iceland in 1903-04. In 1906-08 he was a member of the Mylius Erichsen expedition to the northeast coast of Greenland, on the death of his chief succeeding to the command. He led a sleigh expedition on Greenland north to 83° 30' (1907); with the Englishman Tobias searched

for Mylius Erichsen (1908); and in 1912-19 led an expedition over the inland ice of Greenland. Koch received, among other honors, the Vega medal of the Swedish Anthropological and Geographical Society. He became a member of the International Polar Commission. Consult *Meddelelser om Grönland*, xxvi, xlvii.

KOCH, JOHANNES. See COCCIIUS, JOHANNES.

KOCH, JOSEPH ANTON (1768-1839). An Austrian landscape painter and etcher, born at Obergiebeln, Tirol. In 1795 he made his way to Rome, where he became a follower of Carstens (q.v.), at the same time modeling his style in landscape after Poussin and Claude Lorraine. Among his earlier works were etchings for Carstens's *Les Argonautes, selon Pindare, Orphée, et Apollonius de Rhode* (1799), a series of 20 Italian landscapes, 36 illustrations to Ossian and 14 to Dante; also American landscape views for portions of Humboldt's works (1805). During the years 1812-15 he was in Vienna, and some of his best oil paintings date from this period. Afterward he went to Rome and became a conspicuous figure in the German artists' colony there. He was the first to paint "heroic" or "historical" landscape, and his influence upon his associates was very great. His landscapes, chiefly Italian subjects, are found most frequently in German museums, especially at Berlin, Frankfurt, Hamburg, Munich, and Leipzig. In the Dante room of the Villa Massimo in Rome he painted four frescoes (1824-29). His *Moderne Kunstchronik oder die rumfordische Suppe, gekocht und geschrieben von J. A. Koch* (1834) is an attack upon unfair art criticism. Consult Strauss, *Kleine Schriften* (Bonn, 1877), and Frimmel, in Dohme, *Kunst und Künstler des neunzehnten Jahrhunderts* (Leipzig, 1884).

KOCH, KARL (1809-79). A German botanist, born near Weimar. He studied at the universities of Würzburg and Jena and then undertook a scientific journey to southern Russia (1836-38). He completed his researches in a second journey, in 1843-44. The fruit of this second trip, in which he also visited Asia Minor, Armenia, the Caspian Sea, and the range of the Caucasus, was his *Wanderungen im Orient* (1846-47). In 1836 he was appointed professor of botany in the University of Jena, and in 1847 became professor in the agricultural Hochschule at Berlin, where he remained until his death. Besides several books on travel, Koch wrote the well-known work *Dendrologie* (1869-73).

KOCH, MAX (1855-). A German literary critic. He was born at Munich and was educated there and at Berlin. In 1880 he qualified as docent at Marburg, in 1890 became assistant professor at Breslau, and in 1895 professor. Besides editions of Shakespeare, Chamisso, Goethe, Schiller, Von Arnim, Brentano, F. Schlegel, Hoffmann, Lessing, Platen, Schulz, and Lenau, he wrote: *Helferich Peter Sturz und die schleswigschen Literaturbriefe* (1879); *Ueber die Beziehung der englischen Litteratur zur deutschen im achtzehnten Jahrhundert* (1883); *Shakespeare* (1885); *Gottsched und die Reform der deutschen Litteratur* (1886); *Frans Grillparzer* (1891); *Nationalität und Nationallitteratur* (1891); and, with Vogt, *Geschichte der deutschen Litteratur* (1900; 7th ed., 1911); *Richard Wagner Biographie* (3 vols., 1907-14). He founded in 1886 the *Zeitschrift für vergleichende Litteraturgeschichte*.

KOCH, ROBERT (1843-1910). A famous German physician and bacteriologist born at Clausthal, Hanover. He studied medicine at Göttingen, then practiced in Langenhagen, Rackwitz, and Wollstein. It was at Wollstein from 1872 to 1880, that he began the researches in bacteriology upon which his fame chiefly rests. Koch's researches on the history of anthrax were published in 1876, and two years later followed his study on the history of traumatic infective diseases. These works placed bacteriology upon a firm scientific basis. Appointed in 1880 a member of the Imperial Board of Health in Berlin, he continued the unwearied study of the communicable causes of anthrax, cholera, and tuberculosis, isolating the tubercle bacillus in 1882. To do this it was necessary to invent new appliances for microscopical work, and new methods of staining specimens to render visible these special microorganisms. In this way Koch led advances in bacteriology which are of inestimable value to medical science.

Koch and his supporters have shown that many diseases are caused by specific germs. In experiments upon animals Koch discovered that the injection of diseased blood produced septicæmia in house mice, discovering also that the microorganisms found in the blood of these animals were identical in form and character with those in the blood used for injection. At the site of the injection of the infected fluid abscesses developed. The pus from these abscesses, full of the bacteria, when injected in a diluted form into a healthy animal, invariably produced the disease. Koch produced erysipelas in the same way. The infectious character of tuberculosis of the lungs had been suspected for many years, but to him belongs the credit of discovering its specific germ, which he demonstrated in the sputum of sufferers from the disease. In 1883 Koch became chief of the German commission sent to Egypt and India to investigate cholera, with the result of discovering the cholera spirillum or comma bacillus, and in the same year he published a method of inoculation to prevent anthrax. Returning to Germany in 1884, he received 100,000 marks from the government, and was appointed (1885) professor in the University of Berlin and director of the new Hygienic Institute. In November, 1890, through the premature report by a student, it became generally known that Dr Koch had discovered a substance which, when administered by injection hypodermically, was destructive of the tubercle bacilli, and hence presumably a swift and certain cure for tuberculosis. Physicians from all countries flocked to Berlin, and consumptives traveled thither in the hope of certain cure. Amid all this clamor Koch remained for a long time silent as to the method of preparing the "lymph" and singularly conservative in the claims that he made of its efficacy. In January, 1891, while not giving all the details of its preparation, he made it evident that his lymph was itself prepared from the bacilli. Billroth, Schrotter of Vienna, and Crocq of Brussels promptly stated their doubt of its safety. Subsequent experience has shown that tuberculin (q.v.) is useful as a test, and a help in the cure, of tuberculosis. The lymph, or, as he preferred to call it, the *paratuberculin*, is a poison and must be used with great caution and in minute doses.

In 1901, before the British Congress on Tuberculosis, held in London, Koch called attention

to the fact that even at his first publication of the aetiology of tuberculosis he expressed himself with reserve regarding the identity of the disease in man and animals, announcing his belief that bovine tuberculosis and human tuberculosis were distinctly different diseases, confirming the belief of Theobald Smith, of Washington, stated a year previous. In 1903 Koch began the study of blood infections in East Africa. He demonstrated within the body of ticks, through whose bites "African relapsing fever" is transmitted, the spirochetæ of the disease. In the body of the tick he also found the piroplasma which causes "Texas fever"; he proved that the tsetse fly transmits the trypanosomata in the fluid exuded at the moment of biting, confirming the suggestions of previous investigators. He also demonstrated the parasites of "coast fever."

In 1905-06 Koch was commissioned by the German government to investigate West African "sleeping sickness" (q.v.), which in recent years has caused the death of several hundred thousand people. It was in 1905, also, that he was awarded the Nobel prize for medicine. Among his published works are: *Untersuchungen über die Aetologie der Wundinfektionskrankheiten* (1878, Eng. trans. by Cheyne, 1880); *Ueber die Milzbrandimpfung. Eine Entgegnung auf den von Pasteur in Genf gehaltenen Vortrag* (1882); *Beitrag zur Aetologie der Tuberculose* (1882; Eng. trans. by Boyd, 1886); *Ueber die Cholera-bakterien* (1884, Eng. trans. by Laycock, 1886); *Ueber Naturheilung und medizinische Kunst* (1885); *On Disinfection*, abstracted and translated by Whitelegue (1886); *Weitere Mittheilungen über ein Heilmittel gegen Tuberculose* (1890); *Ueber bakteriologische Forschung* (1890; Eng. trans., 1891); *Ergebnisse der vom deutschen Reich ausgesandten Malaria-Expeditionen* (1900); *An Investigation of Pathogenic Organisms* (trans. by Horsley, 1886); *Aerztliche Beobachtungen in den Tropen* (1898); *Diagnosis, Treatment, and Prophylaxis of Tropical Malaria* (trans. by Shakespeare, 1898). His last paper, "The Epidemiology of Tuberculosis," was read before the Academy of Sciences of Berlin, April 7, 1910, only six weeks before his death. In accordance with his request his body was cremated. Consult: H. M. Biggs, "Robert Koch and his Work," in *American Review of Reviews*, vol. xxiv (New York, 1901); Bernhard Fischer, "Robert Koch," in *Deutsche Rundschau*, vol. xxxvii (Berlin, 1910); J. A. Wyeth, *Memorial Address* (New York, 1911). See TUBERCULOSIS and TUBERCULIN.

KOCHANOWSKI, kô'kâ-nô'f'skê, JAN (1530-84). A famous Polish humanistic poet. He was born on the family estate, Sycyna, in the Government of Radom. In 1544 he entered the University of Cracow, and in 1552 he continued his studies at the University of Padua. He traveled for some time in Italy, and in 1553 he went to Paris, where he met Ronsard, who encouraged him to write in verse, in which art he soon became famous. On his return home he was appointed royal secretary at the court of King Sigismund Augustus. Soon afterward he was presented with two benefices. In 1568, however, he retired to his estate, Czarnylas, where he devoted himself to writing poetry, taking at the same time keen interest in all political changes of his country. He later refused the post of poet laureate at the court of King Stephen Báthory. Kochanowski is the most im-

portant Polish poet of his century. He wrote in Polish and in Latin. In the former the most famous of his works are the *Treny* (Cracow, 1580); elegies on the death of his daughter Ursula, which are considered masterpieces in form and style; the tragedy *Odprawa posłów greckich* (The Dispatch of the Greek Ambassadors; 1578), in commemoration of the marriage of Zamojski with the Princess Báthory; *Proorzec albo hold pruski* (Homage to the Prussian Banner; 1569), brought out by the Lublin union; and the satire *Z goda* (1564). In his *Fraszki* (Epigrams), miscellaneous poems and anecdotes (3 vols., 1584), he appears at his best. His translation of the Psalms (1579), stamped with vividness and simplicity, is considered the best in existence. In the Latin language he wrote *Lyricorum Libellus* (1580), *Elegiarum Libri Quatuor* (1584), and many occasional poems which have been translated into Polish by Brodzinski in 1829 and by Kondratowicz Syrokomla in 1851. Kochanowski welded the classical and Polish elements and largely contributed to the development and refinement of his native language. His writings were for the first time published collectively at Cracow in 1584-90, but the last and best edition, the so-called jubilee publication, appeared in Warsaw (1884). Many of his poems were also translated into German by H. Nitschmann (1875). For biographies of Kochanowski, consult Von Przybowski (Posen, 1857), also Lowenfeld, *Jan Kochanowski und seine lateinischen Dichtungen* (ib., 1878).

KOCHER, kôc'êr, EMIL THEODOR (1841-) A Swiss surgeon, born at Bern. He studied medicine at Bern and surgery at Berlin, Paris, and London and then returned to his native city. There he was connected with the university after 1866, becoming professor and director of the surgical clinic in 1872. In 1909 he was awarded the Nobel prize for medicine. His especial field was in operation on the thyroid gland, and he first described and studied *cachexia thyreopriva* (1883). His later work included transplanting the thyroid gland, study of the blood in exophthalmic goitre, study of cancer of the thyroid, and curability of cancer of the stomach; more recently he described tumors of the hypophysis (pineal gland) and the prevention of cretinism. He wrote: *Die antiseptische Wundbehandlung* (1881), *Vorlesungen über chirurgische Infektionskrankheiten* (1895), with Tavel, *Encyklopädie der Chirurgie* (1901), with Quervain, *Kocher's Chirurgische Operationslehre* (2d ed., 1894), which is to be had in English as *Text Book of Operative Surgery* (new ed., revised and enlarged, 2 vols., 1911), is considered a classic.

KÖCHLY, kô'k'lê, HERMANN (1815-76) A German classical scholar and educational reformer. He was born in Leipzig and was educated there. He taught in a school at Saalfeld, near Meiningen (1838-40), and in another at Dresden (1840-49). He published *Ueber das Princip des Gymnasialunterrichts der Gegenwart* (1845) and *Zur Gymnasialreform* (1846). The scheme set forth in these pamphlets stressed the natural sciences and, in Latin and Greek, urged emphasis on content, rather than on grammar and style, and the gradual abolishment of speaking and writing those languages. In February, 1849, Köchly was elected to the Lower House of the Kingdom, but after taking part in the revolutionary struggle in May was

forced to flee. He went to Brussels; in 1850 he became professor at Zurich and in 1864 at Heidelberg. He was a member of the German Reichstag from 1871 to 1873. He wrote: *Quintus Smyrnaeus* (1853); *Hesiodus* (1870), *Arati, Manethome, Maximi et Aliorum Astrologica* (1851); *Nonni Dionysiaca* (1858), seven dissertations *De Iliadis Carminibus* (1850-59); *Iliadis Carmina XVI.* (1861); *De Diversis Hesiodæ Theogoniæ Partibus* (1860); three dissertations *De Odysseæ Carminibus* (1862-63); *Geschichte des griechischen Kriegswesens* (1852); *Griechische Kriegsschriftsteller* (1853-55); *Einleitung zu Caesars Kommentarien über den Gallischen Krieg* (1857); *Onosandri de Imperatoris Officio Liber* (1869). He worked also on Greek tragedy, on Caesar, and on Cicero. Consult Hug, *Hermann Kochly* (Basel, 1878); Büchel, *Hermann Kochly ein Bild seines Lebens* (Heidelberg, 1904). Sandys, *A History of Classical Scholarship*, vol. in (Cambridge, 1908).

KOCH'S LYMPH. See TUBERCULIN.

KOČIAN, kō'tsē-ān, JAROSLAV (1884-). A Bohemian violinist, born at Wildenschwert from 1899 to 1901 he was a pupil of Sevcik at the Prague Conservatory. Thereafter he concertized with phenomenal success throughout Europe and America. He cultivated with evident predilection the bravura style of playing, of which, with the single exception of Kubelik (q.v.), he came to be the foremost exponent of his time.

KOCK, kōk, CHARLES PAUL DE (1794-1871). A popular French novelist, son of a Dutch banker who was guillotined in the year of his son's birth. Kock, born at Passy, May 21, 1794, began life as a banker's clerk, but at 20 he entered upon the publication of melodramas and farces, from which he turned in *Georgette* (1820) to fiction and achieved in *Gustave le mauvais sujet* (1821) a success which he extended in *Frère Jacques* (1822). *Le barbier de Paris* (1826; translated into many languages), *André le Savoyard* (1824), *La laitière de Montfermeil* (1827), *Monsieur Dupont* (1825), *Un tourlourou* (1837), *La femme, le mari et l'amant* (1829), *Le cocu* (1831), and *La pucelle de Belleville* (1834) are typical of his work. *Le monsieur* (1842) marks the beginning of his decline. Kock's books deal with the social sphere of shopgirls and clerks and the democratic bourgeoisie. The stories are full of observation at first hand and of spicy humor. They are rather vulgar, but not immoral. They were extraordinarily popular. A 56-volume edition of his works came out in 1884. An English translation was begun in 1903 and completed in 1904. It appeared in *Masterpieces of French Literature in English* (20 vols., Philadelphia, 1903-04), translated by George Burnham Ives. *Complete Works* (Boston, 1902) were translated by Mary Hanford Ford. Consult Trimm, *La vie de Charles Paul de Kock* (Paris, 1873).

KODAK. See PHOTOGRAPHY

KODAMA, kō'dā-mā, GENTARO, VISCOUNT (c.1852-1906). A Japanese soldier, born in Choshu. He fought on the Imperial side in the rebellion of 1874 and the Satsuma rebellion of 1877, studied military science in Europe, and became Assistant Minister of War in 1892. In 1900 he became Governor-General of Formosa and in 1902 received in addition the portfolio of the Interior, which he held till October, 1903. In October, 1903, he became vice chief of the general staff, in which capacity he carried out

the first mobilization of troops for Manchuria in 1904. Later in the year he went to Manchuria as chief of staff to Marshal Oyama (q.v.). His was the master mind which sent the Japanese armies to unbroken victory in the Russo-Japanese War of 1904-05; the army commanders Kuroki, Oku, Nodzu, and Nogi (qq.v.) were his instruments, and the commander in chief Oyama merely lent sanction to Kodama's orders. After the war he was created Viscount, returned to Formosa as Governor-General, but was recalled to Tokyo and made chief of the general staff shortly before his death, which occurred on July 23, 1906.

KODIAK, kōd-yāk', or **KADIAK**. The largest island of Alaska, having an approximate area of 36,000 square miles, situated to the south of Cook Inlet (Map. Alaska, H 7). In 1910 the population of its three largest towns were: Karluk, 549, Kodiak, 438; Akhiok, 106. Its chief product is salmon, the Karluk River being the best salmon stream of Alaska. The rainfall of 61 inches is well distributed, and the temperature mild, ranging from a mean of 28.8° in December to 55.2° in August. In late years the United States Department of Agriculture has introduced cattle farming, with promising results. Church and school facilities for the communities, mostly native, are ample. The Kodiak bear is the largest species in the world.

KO'DOK, or **FASHODA**, fā-shō'dā. A town and headquarters of a province of Egyptian Sudan, situated in an unhealthy region on the upper or White Nile, in lat 9° 53' N. and long 32° 7' E., 460 miles by river from Khartum (Map: Egypt, C 6). It was founded by the Egyptian government in 1865 and was almost entirely deserted during the Mahdist uprising which broke out in 1881. A French expedition under Captain Marchand occupied Kodok in July, 1898. After the victory of Omdurman by Lord Kitchener in September of the same year the British government demanded the evacuation of Kodok by the French—a demand complied with in consideration of commercial concessions in the upper Nile region and the extension of French rule in central Sudan, so as to include the territories of Wadai, Baghirmi, Kanem, Tibesti, Borku, and part of the desert. The Anglo-French convention of March, 1899, fixed the boundary line between the British and the French possessions in north Africa and provided for commercial equality for all nations in the region between Lake Chad and the upper Nile.

KOEHLER, kē'lēr, ROBERT (1850-). An American genre painter, born at Hamburg, Germany. He was brought to the United States in 1854, was apprenticed to a lithographer in Milwaukee in 1866, and later practiced his profession in New York, where he studied drawing in the night classes of the National Academy of Design. He also studied at the Art Students' League and in Munich, Germany, under Loefftz and Defregger. His works are in the style characteristic of the Munich school; they are: "Her Only Support" (1882); "The Artist" (1883); "The Strike" (1886). "The Holiday Occupation" is in the Pennsylvania Academy, Philadelphia. He became director of the Minneapolis School of Fine Arts in 1893.

KOEHLER, SYLVESTER ROSA (1837-1900) An American art critic. He was born in Leipzig, but came to America when he was 12 years

old and from 1868 resided in Boston. He is chiefly known for his important part in the development of the graphic arts in America; by his original publications, translations, and magazine articles; and by his lectures, delivered at Lowell Institute, Boston, the National Museum, Washington, and elsewhere. His most important publications are: *Original Etchings by American Artists* (1883); *American Art* (1886); *Etching: An Outline of its Technical Processes and its History* (1885); *A Chronological Catalogue of the Engravings, Dry-Points, and Etchings of Albrecht Durer* (1887). In 1880-81 he edited the important *American Art Review*. In 1887 he was appointed director of the cabinet of engravings at the Boston Art Museum, and he served as director also of the department of graphic arts in the National Museum, Washington.

KOEHNE, kē'ne, BERNHARD, BARON (1817-86). A German numismatist and armorer, born in Berlin and educated at Berlin, where he was docent for many years, and at Leipzig. In 1845 he went to St Petersburg as curator of coins. There he edited *Mémoires de la société d'archéologie et de numismatique de Saint Pétersbourg* (1847-52), containing the work he had begun in the *Zeitschrift für Münz-, Siegel- und Wappenkunde* on the archaeology of the Middle Ages. He wrote also *Beiträge zur Geschichte und Archäologie von Chersonesus in Taurien* (1848) and the splendidly illustrated *Description du musée du feu prince B. Kotchoubey* (1857).

KOEKKOEK, kōōk'kōōk, BAREND CORNELIS (1803-62). A Dutch landscape painter, born at Middelburg, Holland. He studied under his father, Jan Hermann Koekkoek (1778-1851), a marine painter, and at the Amsterdam Academy under Schelfhout and Van Oos. His paintings, very popular in their day, show correct drawing, but are dry in color and niggling in execution. He took gold medals at Amsterdam in 1840, at the Paris Exposition in 1855, and at The Hague. In 1841 he removed to Cleves, in Rhemish Prussia, where he founded an academy of design. There are many examples of his landscapes in the museums of Holland, Germany, and the United States.

KO'EL (Hind. *kōyal*, *kōklā*, Prak. *kōēla*, Skt. *kōkīla*, cuckoo; onomatopoeic in origin). A cuckoo of the genus *Eudynamis*. Four species are known, two in the East Indian region and two in Australasia. They are cuckoo-like in form, but rather stout, and are remarkable for a sexual difference in coloration, the male being glossy black and the female rufous, with black bands. Still more unusual is the fact that the young resemble the males in plumage and not the females. The koels are parasitic, depositing their eggs singly in the nests of other birds, as do several other members of the family (see CUCKOO), but seem to look after their offspring to a certain extent, for they have been seen feeding them after they have left the nest of the foster parents. One species (*Eudynamis honorata*) is numerous and familiar in India, where it is known as rain bird. A common species of the Philippines (*Eudynamis mindanensis*) is there called phow. The blue-headed koel (*Eudynamis cyanocephala*) is a native of Australia. Consult Dewar, *Birds of the Plains* (Calcutta, 1909). See Plate of CUCKOOS.

KOENEN, kōō'nen, TILLY (c.1880-). A celebrated Dutch Lieder singer, born of Dutch

parents on the island of Java. Until her sixteenth year she devoted her entire attention to the piano, but then, upon her mother's advice, had her voice cultivated at the conservatory in Amsterdam and later by Cornelie van Zanten, of Berlin. Her début took place in London in 1899. In 1909 she made a most successful tour of the United States. The extraordinary natural beauty of her voice and her emotional intensity amply counterbalance some slight shortcomings of mere technical manipulation.

KOENIG, kē'nīk, HEINRICH JOSEPH (1790-1869). A German novelist, born at Fulda and educated there. He held offices in Fulda and Hanau. His earlier works, the dramas *Die Erfüllung* and *Wyatt*, were followed by *Rosenkranz eines Katholiken* (1829) and *Der Christbaum des Lebens* (1831). Because of these books he was excommunicated by the Catholic Bishop and entered the Protestant church. He became a member of the Diet of Hesse-Cassel in 1832 and was an opponent of the reactionary Minister Hassenpflug. In 1860 he moved to Wiesbaden. Among his dramas may be mentioned *Die Bussfahrt* (1836). His historical novels are now little read. The best are *Die hohe Braut* (1833), *Die Klubbisten in Mainz* (1847), and *König Jeromes Karneval* (1855). He wrote once more on theological matters in *Was ist die Wahrheit von Jesu?* (1867), and the autobiographical sketches: *Auch eine Jugend* (1852), *Ein Still-leben* (1861), and *Eine Fahrt nach Ostende* (1845). His collected works appeared in 20 volumes (1854-68).

KOENIG, ROBERT (1828-1900). A German educator and author, born at Danzig. He studied philology and theology in Berlin, Edinburgh, Bonn, and Halle, was rector of a young women's seminary at Oldenburg, edited the home journal *Daheim* at Leipzig from 1864 to 1899, and then settled at Potsdam. He is best known through his popular but not very trustworthy *Deutsche Literaturgeschichte* (29th ed., 1903); and besides a number of popular and juvenile books, such as *Der grosse Krieg von 1870* (2d ed., 1872) and *Der alte Nettelbeck* (1873), wrote *Zur Charakteristik der Frauenfrage* (1870), and other works on women's rights, and *Deutsches Frauenleben im deutschen Liede* (2d ed., 1891). He also translated several of Walter Scott's novels.

KOENIG, kē'nīk, RODOLPHE (1832-1901). A French physicist, born at Königsberg in Prussia. He went to Paris in 1851, worked in the factory of Vuillaume at the construction of musical instruments, and in 1858 established a manufactory of acoustic instruments for the scientific excellence of which he enjoyed a unique reputation. He made valuable studies of graphic representation of sound, invented a manometric flame, and, following an idea originating with Scott de Martinville, constructed a phonograph, by which the vibrations of sound are recorded. Koeng improved Seebeck's siren, repeated Reis's early experiments with the telephone, and exhibited at Philadelphia in 1876, with many other acoustic instruments, a tonometer with 670 forks. His tuning forks were especially fine and became the standard among physicists. His important writings were *Quelques expériences d'acoustique* (1882, reprinted from Poggendorff's *Annalen*) and a *Catalogue raisonné d'appareils d'acoustique* (1859-69).

KOENIGS, kē'nīks, GABRIEL (XAVIER PAUL) (1858-). A French mathematician, born at

Toulouse. He received the degree of doctor of sciences in 1882 and the following year was appointed to the faculty of Besançon, then to that of Toulouse (1885). He later became professor of physical and experimental mechanics at the University of Paris. His original treatises upon geometry, mechanics, and like subjects were published in different journals of mathematics, in the records of the Academy of Sciences and of the Normal School, and he issued independently: *Leçons de l'agrégation classique de mathématiques* (1892); *Sur les lignes géodésiques* (1893), which was crowned by the Academy of Sciences; *Leçons de cinématique* (1895); *La géométrie réglée et ses applications* (1895); *Leçons de cinématique professées à la Sorbonne* (1897); *Introduction à une théorie nouvelle des mécanismes* (1905).

KOENIGSBERGER, kē'niks-bēr'gēr, LEO (1837-). A German mathematician, born in Posen. Educated at the University of Berlin, he taught mathematics and physics in a military school in Berlin from 1860 to 1864 and became professor at Greifswald in 1864, at Heidelberg in 1869, at the Dresden Polytechnic in 1875, at Vienna in 1877, and again at Heidelberg in 1884. Besides technical papers in mathematical periodicals, he wrote a valuable biography of Hermann von Helmholtz (1902), of which there is an English version (1906) by F. A. Welby, and a sketch of C. G. J. Jacobi (1904) and *Die Prinzipien der Mechanik* (1901).

KOEPPING, kēp'ing, KARL (1848-). A German copperplate engraver. He was born in Dresden and studied painting at the Munich Academy and later etching and engraving under Waltner in Paris. In 1890 he was appointed director of the chief atelier for copperplate engraving and etching connected with the Berlin Academy. He particularly excels in his faithful and powerful reproductions of Rembrandt; among his finest plates after this master are the portrait of an old man (Dresden Gallery), the "Syndics of the Clothiers' Guild," "Joseph Accused by Potiphar's Wife," and "The Minister Anselmo Comforting a Woman." Fine examples of the versatility of his talent are the plates of the "Banquet of the Officers of St. George's Shooting Company," after Frans Hals; "Frou-frou" after Clairin; and "Morning," after Jules Breton. He received the Grand Prix at Paris in 1889 and 1900 and gold medals at Berlin, Munich, Vienna, Paris, Dresden, and Leipzig. His best-known original engraving is "Girl at a Pond."

KOERBER, kēr'bēr, ERNST VON (1850-). An Austrian statesman, born in Trent. After studying law he received a post in the Ministry of Commerce (1874), where he became expert in railway administration. He was made chief of section in 1893 and manager of the state railways in 1895. In 1897-98 he was in the Gautsch cabinet as Minister of Commerce and in 1899 in the Clary cabinet as Minister of the Interior. In January, 1900, he became Premier and Minister of the Interior, and after October, 1902, held also the portfolio of Justice. During his premiership the strife of nationalities led to extraconstitutional methods of government. He resigned Dec. 31, 1904.

KOESTER, kēs'tēr, HANS LUDWIG RAIMUND VON (1844-). A German naval officer, born in Schwerin, the son of a poet. He was educated at the Werder Gymnasium in Berlin,

entered the navy as a "cadet aspirant" at 15, and became a lieutenant before he was 20. He was chief of staff in 1884-87, then chief director of docks at Kiel, rear admiral in 1889, vice admiral in 1892, chief of the manœuvre squadron in 1893 and of the Baltic marine station in 1896, admiral in 1897, inspector general of marine in 1899, and chief of the active battle fleet from 1903 to 1906, when he retired. In 1900 he had been made a hereditary noble and in 1905 received the rank of Grossadmiral (corresponding to army field marshal) and was made a member of the Prussian House of Lords. After leaving active service he was prominent in the "greater navy" movement, becoming president in 1908 of the German Navy League (Flottenverein). Consult the chapter on Koester in F. W. Wile, *Men around the Kaiser* (Philadelphia, 1913).

KOETSVELD, kōōts'vêlt, CORNELIS ELIZA VAN (1807-93). A Dutch novelist, born at Rotterdam. He studied for the ministry at Leyden and obtained his first charge in 1830. Afterward he was pastor at Berkel and Schoonhoven and in 1849 was appointed court preacher at The Hague. His numerous theological writings are little known, but his novels and descriptions of country life in his own villages have a place in Dutch literature. The best of these sketches is *Schetsen uit de pastorij te Mastland* (1843; 13th ed., 1902), translated into English by Thomas Keightley as *The Manse c.* (1860). His collected tales, sketches, etc., were issued in 10 volumes (Arnhem, 1897-98). Consult Jan ten Brian, *Geschiedenis der noord nederlandsche Letteren in de 19e Eeuw*, vol. 1 (Rotterdam, 1904).

KOFOID, CHARLES ATWOOD (1865-). An American zoologist, born at Granville, Ill. He graduated from Oberlin College in 1890 and from Harvard University (Ph.D.) in 1894; until 1900 taught at the universities of Michigan and Illinois; and thereafter was connected with the University of California, becoming professor of zoölogy in 1910. At various times he was identified with the San Diego Biological Station, the Agassiz expedition to the tropical Pacific (1904-05), and the Scripps Institute of Biological Research; and he served on the editorial staffs of various scientific journals. His investigations and contributions deal particularly with plankton, the embryology of Mollusca, and the morphology and taxonomy of Protozoa.

KOFU, kō'fū. The chief town of the Province of Kai, Yamanashi ken, Japan, about 80 miles southwest of Tokyo (Map: Japan, F 6). It stands in a mountainous region and is one of the most progressive towns in Japan. It has many fine buildings in European style. Its chief industry is silk weaving. The thin sarsenet-like fabric called kai-ki and used for linings is its most celebrated product. Here are cut and polished many objects of rock crystal, which is quarried in the neighboring mountains. The province is also noted for its fine grapes, and a most excellent wine is produced from them. Pop., 1898, 37,561; 1903, 44,188; 1908, 49,882.

KOGEL, kō'gel, GUSTAV FRIEDRICH (1849-). A German musical conductor, born at Leipzig. He received his first musical education from his father, who was a trombone player in the Gewandhaus Orchestra. From 1863 to 1867 he attended the Leipzig Conservatory, and then settled in Alsace as a music teacher. At the outbreak of the Franco-Prussian War he re-

turned to his native town, where he became connected with the publishing house of C. F. Peters, for whom he edited a large number of operatic scores. In 1874 he began his career as conductor at Nuremberg, subsequently filling similar positions at Dortmund, Aix-la-Chapelle, Cologne, and Leipzig. From 1887 to 1891 he conducted the Berlin Philharmonic Orchestra, proving himself a symphony conductor of extraordinary ability. In 1891 he assumed the direction of the Museum Concerts at Frankfurt, which under him became events of prime importance. As a guest conductor, he made extensive tours of Germany, Spain, and Russia. In 1906 he appeared with the Philharmonic Society of New York.

KOGEL, kē'gel, RUDOLF (1829-96). A German theologian and famous preacher, born at Birnbaum in the Province of Posen. He studied theology and philosophy at the universities of Halle and Berlin. After teaching and preaching for a number of years he was appointed court preacher at Berlin in 1863, and the following year was made counselor of the consistory of Brandenburg and counselor to the Minister for Public Worship. In 1880 he advanced to the rank of royal chaplain in chief, and in 1884 he became a member of the State Council; but between 1891 and 1894 ill health compelled him to relinquish all his posts. By dint of his great influence with the Emperor William, he defeated Falk's Church policy (see FALK, ADALBERT), and thus gave the spiritual development of Prussia a conservative direction. His works include: *Der erste Brief Petri in Predigten ausgelegt* (3d ed., 1890), *Die Seligpreisungen der Bergpredigt* (2d ed., 1869), *Kirchliche Gedenkblätter aus der Kriegszeit* (1871), *Das Vaterunser in Predigten ausgelegt* (3d ed., 1889), *Der Brief Pauli an die Römer in Predigten ausgelegt* (2d ed., 1883), *Vaterländische und kirchliche Gedenktage, Reden und Ansprachen* (2d ed., 1892), *Die vier Evangelien in Predigten und Homilien ausgelegt* (1889). In 1880 Kögel was made coeditor of the poetical yearbook *Neue Christoterpe* (Bremen).

KOGIA, kō'jī-ā (Neo-Lat.). The name often used as an English denomination of the genus including as its typical species the "pygmy" sperm whale of the south Pacific.

KOH-I-NOOR, kō'é-nōor', or **KOH-I-NUR** (Pers., mountain of light). One of the largest known diamonds, now among the British crown jewels. It is said to have been found in the Golconda mines and originally weighed about 900 carats. It was long the property of the Indian rulers and came into the possession of the English in 1849, through the conquest of the Punjab. Its weight was reduced by poor cutting to 279 carats, then to 186, 106, and in 1852 to 102½ carats. Its value is estimated at about \$600,000. A model of the Koh-i-noor is exhibited in the Tower of London. See Plate of DIAMONDS.

KOHL, köl, JOHANN GEORG (1808-78). A distinguished German writer on travels and history, born in Bremen. He studied law in Göttingen, Heidelberg, and Munich, for six years was tutor in a family in Courland, and, having traveled in Russia, made his home in Dresden in 1838. The favorable reception accorded to the accounts of his travels in Russia as, e.g., *Petersburg in Bildern und Skizzen*, induced him to visit nearly every country of Europe and to publish a series of interesting descriptions of

those parts, during which period he also wrote: *Der Verkehr und die Ansiedelungen der Menschen in ihrer Abhängigkeit von der Gestaltung der Erdoberfläche* (1841); *Der Rhein* (1851); *Skizzen aus Natur und Volkerleben* (1851); *Die Donau* (1854). He next spent four years (1854-58) in North America, traveling and making geographical and historical researches, which resulted in the publication of *Reisen in Canada, New York und Pennsylvania* (1856); *Reisen im Nordwesten der Vereinigten Staaten* (1857); *Kitschi-Gami oder Erzählung vom Oberen See* (1859); *Geschichte der Entdeckung Amerikas* (1861); *Geschichte des Golfstroms und seiner Erforschung* (1868); *History of the Discovery of the East Coast of North America, particularly the Coast of Maine* (1869); and other works. On his return to Europe he settled in Bremen, where he was appointed city librarian in 1863. The more important of his other numerous works are *Nordwestdeutsche Skizzen* (1864; 2d ed., 1873); *Die Völker Europas* (2d ed., 1872); *Die geographische Lage der Hauptstädte Europas* (1874); *Geschichte der Entdeckungsreisen und Schiffahrten zur Magellansstrasse* (1877), *Die natürlichen Lockmittel des Völkerverkehrs* (1878).

KOHLER, kō'ler, JOSEF (1849-). A German jurist, author, and poet, born at Offenburg, Baden. He studied law at the universities of Freiburg and Heidelberg, was judge at Mannheim, and became professor at Würzburg in 1878 and in Berlin in 1888. In his special field, the comparative history of law, he became one of the great authorities. On civil law in Germany he wrote: *Beiträge zur germanischen Privatrechtsgeschichte* (1883-88); *Forschungen aus dem Patentrecht* (1888), *Das Autorrecht* (1880), *Aus dem Patent- und Industrie-recht* (1889-92); *Das literarische und artistische Kunstwerk und sein Autorschutz* (1892); *Der Prozess als Rechtsverhältnis* (1888); and others. Among his numerous contributions to the history of comparative jurisprudence may be mentioned: *Moderne Rechtsfragen bei islamischen Juristen* (1885), *Das chinesische Strafrecht* (1886), *Rechtsvergleichende Studien über islamisches Recht, das Recht der Berbern, das chinesische Recht, und das Recht auf Ceylon* (1889), *Altindisches Prozessrecht* (1891). The philosophical aspect of law he treated in *Shakespeare vor dem Forum der Jurisprudenz* (1883), *Das Recht als Kulturerscheinung* (1885), and *Das Wesen der Strafe* (1888); and he also made excursions into the realm of art history with the essays *Aus dem Lande der Kunst* (1882), *Aesthetische Streifereien* (1889), and *Zur Charakteristik Richard Wagners* (1893). His poetical efforts comprise: *Lyrische Gedichte und Balladen* (1892), *Feuermythus oder Apotheose des Menschengesistes nach Motiven der polyestischen Sage* (1893); *Der Liebestod: nach Motiven der mexikanischen Ueberlieferung* (1898); *Neue Dichtungen* (1894); *Melusine* (1896), a dramatic poem. He was one of the editors of the journal *Zeitschrift für vergleichende Rechtswissenschaft*, edited the sixth edition of Holzdorff's *Enzyklopaedie der Rechtswissenschaft*, and founded in 1888, with Viktor Ring, the journal *Archiv für bürgerliches Recht*. Further works include: *Zur Urgeschichte der Ehe* (1897); *Dantes heilige Reise* (1900-02); *Vom Lebenspfad* (1902), essays, and other very numerous works, amounting in 1903 to over 500. Among the later titles are: *Aus vier Weltteilen*,

Reisebilder (1908); *Kunstwerkrecht* (1908); *Lehrbuch der Rechtsphilosophie* (1909); *Grundriss des Strafrechts* (1912).

KOHLER, KAUFMANN (1843-). An American Jewish clergyman and theologian, born at Fürth, Bavaria, Germany. He was educated at the universities of Munich, Berlin, Leipzig, and Erlangen (Ph.D., 1867), but as early as 1869 came to the United States to be pastor of the Beth El congregation in Detroit. He was elected rabbi of the Sinai congregation at Chicago in 1871, and was minister of Temple Beth El, New York, from 1879 to 1903, when he became president of the Hebrew Union College, Cincinnati. In 1885 he called the Rabbinical Conference at Pittsburgh, Pa., at which the platform for Reform Judaism in America was adopted. He edited the *Sabbath Visitor* (1881-82), the *Jewish Reformer* (1886), and was one of the editors of the *Jewish Encyclopedia*. He is author of *Der Segen Jacobs* (1868); *On Capital Punishment* (1869); *On Song of Songs* (1877); *Ethical Basis of Judaism* (1877); *Backwards or Forwards—Lectures on Reform Judaism* (1885); *Church and Synagogue in their Mutual Relations* (1889); *A Guide to Instruction in Judaism* (1899); *Systematische Theologie des Judenthums auf geschichtlicher Grundlage* (1909).

KÖHLER, kô'ler, REINHOLD (1830-92). A German literary critic and folklorist, born at Weimar. He became head of the Archducal Library in his native city in 1857, after studying at Jena, Leipzig, and Bonn. Among his works are the following: *Vier Dialoge von Hans Sachs* (1858); an adaptation of *The Taming of the Shrew*, under the title *Kunst über alle Künste, ein böses Weib gut zu machen* (1864); *Dantes Göttliche Komödie und ihre deutschen Übersetzungen* (1865); *Herders Cid und seine französische Quelle* (1867); *Wielands Oberon* (1868); *Schillers ästhetische Schriften* (1871). From his posthumous papers were published *Aufsätze über Marchen und Volkslieder* (1894).

KÖHLER, ULRICH (1838-1903). A German archaeologist, appointed professor of Greek history at the University of Berlin in 1886. He was born at Klein-Neuhausen in the Grand Duchy of Weimar, and after studying at Jena and Göttingen was secretary of the German Archaeological Institute at Athens (1875-86). His publications include two standard works on Attic inscriptions, *Urkunden und Untersuchungen zur Geschichte des Delisch-attischen Bundes* (1870) and the second volume of the *Corpus Inscriptionum Atticarum* (1877-88), containing the inscriptions from the time of the Archon Euclides to the days of Augustus. Till near the close of his life he made contributions to the learned periodicals on subjects connected with Greek archaeology and Greek history.

KÖHLER, WALTHER (1870-). A German Church historian. He was born in Elberfeld and was educated at Halle, Heidelberg, Strassburg, Bonn, and Tübingen. In 1900 he became docent and in 1904 professor at Giessen, whence in 1909 he went to Zurich, which university had given him the honorary degree of doctor of theology in 1907. His special field the Reformation, among his writings are: *Luther und die Kirchengeschichte* (1900); *Reformation und Ketzerprozesse* (1901); *Die Entstehung des Problems staat und Kirche* (1903); *Luthers Thesen mit Gegenschriften* (1903); *Alfred*

Hegler (1906); *Die Anfänge des Pietismus in Giessen* (1907); *Katholicismus und moderner Staat* (1908); *Der Gnostizismus* (1911); *Luther* (1911); *Ulrich Zwingli* (1911); *Ausgewählte Schriften des Erasmus von Rotterdam* (1914).

KOHLMANN, kôl'mân, ANTHONY (1771-1836). A German Jesuit educator and missionary, born in Kaiserberg, Alsace, and educated at Kolmar and Freiburg. He won the title Martyr of Charity through attendance upon plague-stricken citizens of Hagenbrunn, Austria. In 1804 he was sent to Georgetown in the United States; four years afterward he settled in New York, where he established a school for boys and an Ursuline school for girls. It was his refusal to disclose the secrets of the confessional in New York law courts that caused the exemption of priests from that particular form of evidence to become a State law (1828), and he was instrumental in the building of the Mulberry Street Roman Catholic Cathedral (1815). In 1817 he became superior of the Order of Jesus in the United States, but resigned the position in 1821, and from that time until 1824 had charge of the seminary in Georgetown. The result of his controversy with Jared Sparks was published in *Unitarianism Philosophically and Theologically Examined* (2 vols., 1821). He had previously issued *A True Exposition of the Doctrine of the Catholic Church Touching the Sacrament of Penance* (1813); *Centennial Jubilee to be Celebrated by All the Reformed Churches throughout the United States* (1817); and *The Blessed Reformation: Martin Luther Portrayed by Himself* (1818). Father Kohlmann was professor of theology in the Gregorian University at Rome (1824-29).

KOHL-RABI, kôl'râ'bê, or, more properly, **KOHL-RÜBE** (Ger., kale turnip). A cultivated variety of *Brassica oleracea* distinguished by the globular swelling of the stem just above the ground, to the size of a man's fist or larger. Leafstalks spring from the swollen part and add to the peculiarity of its appearance. The part used is the swollen stem, and its uses are similar to those of the turnip. In quality it more nearly resembles the Swedish than the common turnip. It is cultivated like cabbage and in Europe is grown to a considerable extent, but in America it has not become widely popular. For illustration, see Plate of CABBAGE.

KOHLRAUSCH, kôl'roush, FRIEDRICH (1840-1910). A German physicist, born at Rinteln, the son of Rudolf Hermann Arndt Kohlrausch. His education was obtained at Erlangen and Göttingen. In 1866 he became professor at Göttingen, and subsequently was appointed to chairs at Zurich (1870), Darmstadt (1871), Würzburg (1875), and Strassburg (1888). In 1895 he was appointed president of the Imperial Physico-Technical Institute (*Reichsanstalt*) of Charlottenburg, near Berlin, and under his direction the work of this bureau was widely extended and developed. He retired in 1905 and lived in Marburg until his death. Professor Kohlrausch made a brilliant record as an experimental physicist and devised new apparatus and methods for measurements. His researches embraced all departments, but those dealing with electricity and magnetism are of special importance. He investigated most thoroughly the subject of electrolysis and brought out new methods for the absolute measurement of re-

sistance. The elasticity of solids and various problems in light also were investigated by him, and he was the author of *Leitfaden der praktischen Physik*, which, published in 1872, has been issued in many editions and translated into English, being considered a standard work on physical laboratory methods and measurements. An eleventh edition, enlarged and revised, was published in 1910 with the title of *Lehrbuch der praktischen Physik*. A more elementary work based on the above, *Kleiner Leitfaden der praktischen Physik*, appeared in 1900 (2d ed., 1907). Professor Kohlrausch was, besides, the author of *Ueber den absoluten Leitungswiderstand des Quecksilbers* (1888) and of many papers contributed to the *Annalen der Physik und Chemie* and other scientific journals.

KOHLRAUSCH, HEINRICH FRIEDRICH THEODOR (1780–1867). A German historian and educator, born at Landolfshausen. He studied at Göttingen and afterward at Berlin, Kiel, and Heidelberg. After teaching at Düsseldorf and at Münster he was made general inspector of education of the Kingdom of Hanover in 1830. His most important work is *Deutsche Geschichte für Schulen* (10th ed., by Kentzler, 1875). Mention should also be made of the following *Kurze Darstellung der deutschen Geschichte* (15th ed., 1894), *Chronologischer Abriss der Weltgeschichte* (15th ed., 1861); *Die Geschichte und Lehre der heiligen Schrift* (1811). Consult his biographical *Erinnerungen aus meinem Leben* (Hanover, 1863), and articles in the *Allgemeine deutsche Biographie*, vols. xvi, xvii (Leipzig, 1882, 1883).

KOHLRAUSCH, RUDOLF HERMANN ARNDT (1809–58). A German physicist, born in Göttingen. He spent the greater part of his life as a teacher of science and as an experimentalist. He was professor of physics at Marburg and Erlangen and was associated with Wilhelm Weber (q.v.) in making the first measurements of the electric current using absolute units. These experiments formed the foundation of the modern absolute system. The original paper was reprinted in No. 142 of Ostwald's *Klassikern der exakten Wissenschaften* (Leipzig, 1904).

KOHL-RÜBE. See KOHL-RABI.

KOHLSAAT, kôl'sât, HERMAN HENRY (1853–). An American newspaper editor and publisher, born at Albion, Edwards Co., Ill. He was early in business life, and in 1883 bought the bakery lunch business of the firm he had been a junior member of. This business, enlarged as H. H. Kohlsaas & Co., eventually owned several large establishments and conducted a wholesale bakery business. Kohlsaas owned a part interest in the Chicago *Inter-Ocean* in 1891–93, became editor publisher in 1894 of the Chicago *Times-Herald* (amalgamated in 1901 with the Chicago *Record* into the Chicago *Record-Herald*), and also published and edited the Chicago *Evening Post* from 1894 to 1901. In 1910 he became editor of the Chicago *Record-Herald*, and in 1912 he bought the bankrupt *Inter-Ocean*, carried it through a receivership in 1914, and then amalgamated it with the *Record-Herald* under the new name of the Chicago *Herald*.

KOHN, kôn, SALOMON (1825–1904). An Austrian novelist, born in Prague, the son of a Jewish merchant, whose partner in business he became, after having devoted himself to mathematical studies at the university. His novel

Gabriel first appeared anonymously in 1852, became widely known through various translations—in Germany, curiously enough, first in its English version—and was not reissued under its author's name until 1875 (3d ed., 1897). His other novels and tales, mostly descriptive of Jewish life, include. *Der Retter, Bilder aus dem Prager Ghetto; Ein Spiegel der Gegenwart* (1875); *Die silberne Hochzeit* (1882); *Neue Ghetto-bilder* (2d ed., 1886); *Der Lebensretter und andere Erzählungen* (1893); *Furstengunst* (1894); *Ein deutscher Handelsherr* (1896); *Judith Lohrath* (1897). One of his best short stories is *Joseph Singer* (1903).

KOI. See BOGHAZ-KIEUI.

KOIL, kô-êl'. The native name for Aligarh (q.v.), a city of India.

KOILEN, koi'len, LUDOLPH VAN. See CEULEN, LUDOLPH VAN.

KOIMBATUR. See COIMBATORE.

KOKAN. See KHOKAND.

KOKLASS, kô'klas. An Indian pheasant. See PUCRAS.

KO'KOMO. A city and the county seat of Howard Co., Ind., 54 miles by rail north of Indianapolis, on the Wildcat River, and on the Pittsburgh, Cincinnati, Chicago, and St. Louis, the Toledo, St. Louis, and Western, and the Lake Erie and Western railroads (Map: Indiana, E 3). It is primarily a commercial and manufacturing city, the leading manufactures being plate and opalescent glass, lumber products, rubber, steel, and brass goods, automobiles, wood pulp and paper, bits, wire nails, rods, stoves and ranges, electrical goods, pottery, trunks, gates, mittens, heaters, etc. The surrounding region has agricultural and lumbering interests. Kokomo contains a Carnegie library and the Good Samaritan Hospital, while adjoining the city on the south is a beautiful park. Kokomo was first incorporated in 1865 and is governed by a mayor, elected every four years, whose appointive power extends only to committees of the council, and by a unicameral council which elects all administrative officials, except the city judge, treasurer, and clerk, chosen by popular election. The school system is in charge of a board of three resident freeholders who are elected by the city council. There are also boards of works, police, and parks. Pop., 1900, 10,609, 1910, 17,010; 1914 (U. S. est.), 19,694.

KO'KO NOR'. Another spelling for Kuku Nor. 1. A lake in Tibet. See KUKU NOR. 2. A region of Tibet. See TIBET.

KOKOVTSOV, kô-kôf'tsôf, VLADIMIR NIKOLAYEVITCH (1853–). A Russian statesman, born in Korlo, Novgorod. He was educated in St. Petersburg at the Alexander Lyceum and entered the employ of the Ministry of Justice. In 1878 he was sent abroad to study foreign prison systems and in 1882 became an assistant in the Imperial prison administration. He was appointed an assistant to Witte, then Minister of Finance, in 1896, and became Minister of Finance, succeeding Pleske, in 1904. From 1911 to February, 1914, when his health failed, he was head of the Russian Ministry.

KOLA, kô'lâ. One of the most northern settlements of European Russia, situated in lat. 68° 53' N. and long. 30° 40' E., on the peninsula of Kola, in the Government of Archangel (Map: Russia, D 1). Pop., 1911, 649, mostly fishermen. Kola is mentioned as early as 1264 and was fortified in the sixteenth cen-

tury. Near Kola, but farther north, are Alexandrovsk, a naval station founded in 1895, and opposite it is Katharinenhafen, which, though well within the Arctic circle, is an ice-free port from May to the end of August.

KOLA NUT. A brown bitter seed used in medicine. See COLA NUT.

KOLA PENINSULA. A large peninsula of European Russia, extending southeastward from north Finland between the Arctic Ocean and the White Sea (Map: Russia, E 1). It is oval in shape, about 250 miles long and 160 miles wide, being almost cut off from the mainland by a series of lakes and streams. It is mountainous in the southwest, and its coasts are rocky and steep. It is watered by numerous streams and lakes and covered with pine forests, but very sparsely inhabited. A number of Russians live in the small villages along the coast, and a few Lapps inhabit the interior.

KOLAPUR, kô'la-poor'. A city of British India. See KOLHAPUR.

KOLÁR, kô'lär, JOSEF JIRÍ (1812-96). A Bohemian actor, dramatist, and novelist, born in Prague. He was for a time traveling tutor to a noble Hungarian youth, but went on the stage in 1837, became famous in Shakespearean rôles, and by 1869 was director of the Czech theatre at Prague. Besides his translations of Shakespeare, Goethe, and Schiller, he produced half a dozen volumes of prose fiction (1854-61), several comedies such as *Miavenci* (1870) and *Dejte mi čamaru* (1871), and the tragedies *Monika* (1847), *Zižkova smrt* (1850), *Magelona* (1851), *Pražský žid* (1871), *Smíruti* (1881), *Primátor* (1883), *Králůvna Barbora* (1884), *Umrlík hlava* (1885), and *Mistr Jeronym* (1886).—His nephew FRANTIŠEK (1830-95) was an actor of great talent.

KOLARIAN PEOPLES. A group of East Indian tribes, numbering between 2,000,000 and 3,000,000, who inhabit the jungle and mountains of the country west and southwest of Calcutta in the Presidency of Bengal, and the regions adjoining. The principal Kolarian tribes are the Munda-Kols of Chota Nagpur, the Larka-Kols (or Ho, as they call themselves) of the Singbhum District in Chota Nagpur, the Bhumij in western Bengal, the Santals (who inhabit a stretch of country from the mouth of the river Mahanadi in northern Orissa to Bhagalpur on the Ganges in northern Bengal), the Karia of Lohardaga in Chota Nagpur, the Juang or Patun of the Cuttack country about the mouth of the Mahanadi in Orissa, etc. The Savaras of Saoras, inhabiting parts of western Bengal, Orissa, and Madras, are by some authorities classed with the Kolarians and by others with the Dravidian peoples; linguistically they would seem to be more allied to the former and physically, perhaps, more to the latter. A few other smaller tribes are practically in the same condition. The physical type of the Kolarians is probably best preserved in the Juang, about the most primitive tribe of this stock, who are short-statured, dolichocephalic, with prominent zygomatic arches and rather flat faces. The Munda-Kols are the most dolichocephalic and the Larka-Kols (who have some admixture of Aryan blood) the tallest, both these and the Kols of the Northwest Provinces and Oudh being above the average height. Physically the Kolarians are not absolutely distinct from the Dravidians, and many ethnologists class both as subdivisions of one and the same somatic race.

Others, however, think that the Dravidian type differs little from the Hindu, except where it has been modified by contact with the Kolarians and dark aborigines. The "negroid" characteristics of the Kolarian have been much exaggerated, and such as may exist are perhaps due to pre-Dravidian and pre-Kolarian aborigines of negroid stock. The Kolarians have never reached the height of culture attained by the Dravidians, nor have they distinguished themselves in architecture or religion. The Juang represent the lowest stage of the Kolarians, being hunters and gatherers of fruits, roots, etc., and making only the most primitive attempts at agriculture; the Kharia are partly civilized, and some of them use the plow; some of the Santals are at a stage beyond this, as are also some of the other Kols or Mundas. The Kolarians have largely retained their old animistic religion with an overcast of polytheism, although with some of them a rude form of Hinduism prevails. The Kolarian languages are about 10 in number. Unlike the Dravidian tongues, they possess a dual for nouns, but lack a negative verb form. They are rich in inflection by suffixes and in conjugation. The best studied of these is the Santal, a grammar by Skeelsrud was published in 1873, and an edition of *Esop's Fables* in 1886. There is also a *Grammatik der Kolh-Sprache* (Gutersloh, 1882), by Nottrott, and a *Mundari Grammar*, by Hoffmann (Calcutta, 1903).

Bibliography. Man, *Sonthalia and Sonthals* (London, 1867); Hunter, *Annals of Rural Bengal* (ib., 1868-72); Dalton, *Descriptive Ethnology of Bengal* (Calcutta, 1872); Caldwell, *Comparative Grammar of the Dravidian Language* (3d ed., London, 1875); Cust, *Modern Languages of the East Indies* (ib., 1878); Rowney, *Wild Tribes of India* (ib., 1882); V. A. Smith, *The Early History of India* (2d ed., Oxford, 1908). See MUNDAS, SANTALS.

KOLB, kôlp, GEORG FRIEDRICH (1808-84) A German politician, publicist, and statistician. He was born at Speyer in Rhenish Bavaria, where for more than 20 years he conducted a liberal journal until its suppression by the government in 1853. Later, as a member of the Bavarian Parliament, Kolb strenuously opposed the federal union of Germany and was finally forced to take up his residence in Zurich to escape the persecutions of the Bavarian government. He returned in 1860, again to become the editor of a liberal journal. His chief works are *Handbuch der vergleichenden Statistik* (8th ed., 1879) and *Kulturgeschichte der Menschheit* (3d ed., 1884). Under the pseudonym Broch he wrote *Italien und die jetzige politische Lage des übrigen Europas* (1859).

KOLBE, kôl'be, ADOLPH WILHELM HERMANN (1818-84). A German chemist, born at Elliehausen, near Göttingen. He studied chemistry under Wöhler at Göttingen and was assistant to Bunsen and to Playfair. He was professor of chemistry at Marburg (1851-65) and at Leipzig (1865-84). Kolbe carried out many original researches in the field of organic chemistry. He investigated the electrolytic decomposition of organic acids and discovered (1860), jointly with Lautermann, a method of making salicylic acid (q.v.) by the combination of carbolic and carbonic acids. Kolbe edited Liebig and Wöhler's *Handwörterbuch der Chemie* and was for many years editor of the *Journal für praktische Chemie*. His publications in book form include *Ausführliches Lehrbuch der organischen Chemie*

(1855-78 and a later edition), *Kurzes Lehrbuch der anorganischen Chemie* (2d ed., 1884), etc. One of Kolbe's chief titles to fame was his work as a scientific critic, many important researches published during his life having been subjected by him to the most careful scrutiny. However, he was altogether too conservative. Thus, he adhered stubbornly to the older theories of chemical constitution and refused to accept the modern structural theory in spite of the triumphs achieved by it. The theories of stereochemistry, too, were received by him with pointed animosity. (See *CHEMISTRY, History*) Consult Hoffmann, "Nekrolog auf H. Kolbe," in the *Berichte der deutschen chemischen Gesellschaft* (Berlin, 1884), and the "Obituary," in the *Journal of the Chemical Society* (London, 1885).

KOLBERG, kôl'bêrk, or **COLBERG**. A seaport of the Province of Pomerania, Prussia, on the Persante, near its mouth, 95 miles northeast of Stettin (Map: Prussia, F 1). Kolberg has a well-protected harbor at its suburb of Munde, which is a favorite sea-bathing resort. Its industries include iron foundries, machine works, and it also makes pharmaceutical preparations, lumber, and tobacco. Its former strong fortifications have been demolished. The church of St. Mary is a handsome red-brick Gothic edifice dating from the fourteenth century, with richly decorated ceiling. The town hall was built by Zwirner, the architect of the Cologne Cathedral. It has a Gymnasium, a school of navigation, and new government buildings. Pop., 1900, 20,241, 1910, 24,768. Kolberg had its origin in an old Slav fortress. It received municipal rights in 1255 and joined the Hanseatic League in 1284. In 1807 it held out, under Gneisenau and Schill, for six months against the French.

KÖLBING, kôl'bîng, **EUGEN** (1846-99). A German scholar, born at Herrnhut, Saxony, Sept. 21, 1846. After teaching at several Gymnasias he became a lecturer at the University of Breslau in 1873 and in 1880 was appointed there to the professorship of the English language and literature, which he retained until his death. Kolbing edited a large number of works in Old Norse and Middle English; his special interest being in the mediæval romance. His works comprise: *Untersuchungen über den Ausfall des Relativpronomens in den germanischen Sprachen* (1872), *Ueber die nordischen Gestaltungen der Partonopeussage* (1873); *Beiträge zur vergleichenden Geschichte der romantischen Poesie und Prosa des Mittelalters* (1876); *La chanson de Roland* (1877), *Amis und Amiloun zugleich mit der altfranzösischen Quelle* (Heilbronn, 1884); *Flore und Blancheflore* (1896). Kolbing translated from the Icelandic *Die Geschichte von Gunnlang Schlangenzunge* (1878). From 1877 he published *Englische Studien* and founded the equally important *Altenglische Bibliothek* in 1883. He had also begun (1893) an elaborate critical edition of Byron, only two parts of which, containing the *Steege of Corinth* and *The Prisoner of Chillon*, and *Other Poems*, have appeared. All Kölbing's work is characterized by extreme care and accuracy; in all his investigations he was filled with the scientific spirit. He died at Herrenalb, Aug. 9, 1899. A posthumous article, "Zur Entstehungsgeschichte von Byrons Childe Harold," appeared in the *Englische Studien* (1902). Consult: for a biography, the necrology in the *Englische Studien*, vol. xxvii (Leipzig, 1900); for a bibliography, *Chronologisches Verzeichnis der*

von Eugen Kolbing veröffentlichten Schriften, in the same number.

KÖLCSEY, FERENCZ (1790-1838). A Hungarian literary critic and poet, born at Széde-meter in Transylvania. He studied at Debreczen, and became a royal law officer at Pest in 1809. His early verse was published in the *Transylvanian Museum*; he wrote, besides, criticism for various literary magazines. From 1826 to 1829 he was coeditor with Paul Szemere of *Elet és irodalom* (Life and Literature), a connection in which he won his reputation as a critical writer. A member of the Hungarian Diet in 1832-36, he became well known also as an orator and as a parliamentary leader of the Liberal party. His journal of the Diet was published in 1848 and republished in 1874. The Hungarian national hymn was written by Kölcsey. A second edition of his complete works appeared in 1863.

KOLDE, kôl'de, **THEODOR** (1850-). A German theologian, born at Friedland in Silesia. He studied at the universities of Breslau and Leipzig. In 1876 he commenced lecturing on theology at the University of Marburg, where he became professor extraordinary in 1879. In 1881 he was appointed professor of Church history at the University of Erlangen. His principal publications include: *Luthers Stellung zu Konzil und Kirche bis zum Wormser Reichstag* (1876); *Die deutsche Augustinerkongregation und Johann von Staupitz* (1879); *Friedrich der Weise und die Anfänge der Reformation* (1881); *Martin Luther. Eine Biographie* (1884-93); *Die Heilsarmee nach eigener anschauung und nach ihren Schriften* (1885), *Der Methodismus und seine Bchämpfung* (1886), *Luthers Selbstmord: Eine Geschichtslüge Majunkes* (3d ed., 1890); *Ueber Grenzen des historischen Erkennens* (1890); *Die kirchlichen Bruderschaften und die religiöse Leben im moderne Katholizismus* (1895); *Die Augsbürgische Konfession, lateinisch und deutsch, kurz erläutert* (1896, 2d ed., 1911); *Das religiöse Leben in Erfurt beim Ausgange des Mittelalters* (1898); *Die Heilsarmee, ihre Geschichte und ihre Wesen* (1899); *Der Katholizismus und das 20. Jahrhunderts, kritische Betrachtungen* (1903); *Der Staatsgedanke der Reformation und die römische Kirche* (1903); *Die Anfänge einer katholischen Gemeinde in Erlangen* (1906), *Historische Einleitung in die symbolischen Bücher der evangelischlutherischen kirche* (1907; 3d ed., 1913). He also edited the *Beiträge zur bayerischen Kirchengeschichte* (20 vols., 1895-1913) and *Die Universität Erlangen unter dem Hause Willelsbach, 1810-1910* (1910).

KOLDEWEY, kôl'de-vî, **KARL CHRISTIAN** (1837-1908). A German navigator and polar explorer, born at Bucken in Hanover. He made several voyages in his youth, studied navigation at the Polytechnikum in Hanover, and astronomy at the University of Göttingen. Owing to his ability, as set forth by Dr. Petermann, Koldewey was given command of the first German Arctic expedition in 1868, a summer cruise. In 1869-70 he commanded the second expedition, during which he discovered Franz Josef and other fiords and explored the coast of east Greenland to lat. 77° 1' N., the most northerly point reached to that time by any explorer of the region. From 1874 to 1908 he was superintendent of the Imperial German Maritime Observatory, distinguishing himself especially by researches on ship compasses, principally set forth in *The Compass on Board Ship*. He pub-

lished: *Die erste deutsche Nordpolar-Expedition 1868* (1871), *Die zweite deutsche Nordpolar-fahrt* (1873-74). His scientific works are published in the *Annalen der Hydrographie und maritimen Meteorologie*, and the publications of the Naval Institute.

KOLDING, kól'ding. A seaport of the County of Vojst, Jutland, Denmark, where the Kolding River meets the Kolding Fiord, 40 miles east of Esbjerg (Map: Denmark, C 3). The town possesses the ruins of the castle of Koldinghus, built in the thirteenth century and formerly a residence of the Danish kings. It has an electric-light plant, a good harbor, and a flourishing trade in grain and provisions, timber, catgut, lard, and hides. Pop., 1901, 12,516; 1911, 14,210. Kolding has many times during its history suffered from the ravages of war; in 1849 it was the scene of a Danish defeat by the Schleswig-Holstein insurgents.

KOLETTIS, kô-lét'tés, JOANNIS (1788-1847) A Greek patriot and statesman, born at Syrakos, near Janina. In 1821 he was one of the first leaders of the revolution and subsequently took a prominent part in the government. When Capo d'Istria became President (1827), Kolettis was chosen a member of the Panhellenion and Minister of the Interior, but opposed the government in the latter part of Capo d'Istria's presidency. He became a member of the provisional government on the murder of the President, and later of the commission of seven which offered the crown to Prince Otho of Bavaria. On his accession to the throne King Otho made him Minister of the Marine (1833) and President of his cabinet. In 1835 he was Ambassador at Paris, but he was recalled in 1843 after the revolution of September and made head of the ministry in 1844.

KOLGUYEV, kól-gú'yév, or **KALGUYEV**. A Russian island in the Arctic Ocean, situated between lat. 68° 4' and 69° 30' N. and long 48° 4' and 49° 38' E., 75 miles northeast of the Kanin Peninsula (Map: Russia, G 1). Area, 1350 square miles. The surface is mostly level, and a large part is occupied by frozen tundras. The vegetation is extremely meagre, peat bogs are common, and the climate is very severe. Wild fowl abound, and the streams and lakes are rich in fish. The island forms a part of the Government of Archangel and is uninhabited. Only in the summer is the island visited by Samoyed hunters. The coast regions are in some places covered with layers of guano.

KOLHAPUR, kô'lá-poor', or **KOLAPUR**. A native state, feudatory to Bombay, India. Area, 3217 square miles (Map: India B 6). Pop., 1901, 910,011; 1911, 883,441, composed of Maharrattas and Ramusis. The surface is of a rugged character, the western part being crossed by a section of the Western Ghats. In the east the fertile plain of Deccan is watered by the Kistna and other streams and produces largely of cereals, cotton, sugar cane, tobacco, and vegetables. Manufactures include cotton and woolen cloth, hardware, rosba oil, perfumes, glass trinkets, and pottery. It is rich in forest lands. The rulers are lineal descendants of Sivaji, the founder of the Maharratta Empire. Capital, Kolhapur.

KOLHAPUR, or **KOLAPUR**. The capital of the native state of the same name, Bombay, India, the terminus of a branch railway from Meeruj, 188 miles south-southeast of Bombay (Map: India, B 6). The town is picturesquely

situated on the Panchganga River, since 1878 spanned here by a five-arched bridge. Its excellent modern buildings include the Rajah's new palace, the town hall, the public gardens, treasury, government offices, the British agent's residence, a music gallery at the entrance of the palace square, a college, technical school, high school, and the Albert Edward Hospital. Its ancient structures comprise Buddhist palaces, temples, shrines, cenotaphs, and rock-cut caves. It has an important general trade. Pop., 1901, 54,373; 1911, 48,122.

KOLIN, kô-len'. A town in the Crownland of Bohemia, Austria, situated on the Elbe, 40 miles by rail east of Prague (Map: Austria, D 1). Its chief buildings are the fourteenth-century Gothic church of St. Bartholomew with a fine Gothic choir, the old palace, and the town hall. It has also a Gymnasium, a trade school, and a school for drawing. Sugar is the chief product of the town, but it also manufactures machinery, vehicles, spirits, chemicals, roofing paper, lumber, and art goods. In the outskirts are profitable fruit and vegetable farms. Kolin is noted for the battle fought here on June 18, 1757, between 54,000 Austrians under Daun and 31,000 Prussians under Frederick II, in which the former were victorious. As a result of the victory, the siege of Prague was raised and Bohemia evacuated by the Prussians. Pop., 1900, 15,025; 1910, 16,470.

KOLLÁR, kól'lár, JAN (1793-1852) A celebrated Czech poet and scholar. He was born in the County of Turóc, Hungary, studied at Pressburg and Jena, where he met Goethe, and in 1819 became a preacher in an Evangelical church in Pest. Sorrow at separation from a sweetheart of his student days was the immediate stimulus of his first poetic production, *Básně* (Poems, 1821), consisting of 76 sonnets. In 1824 the collection had become 150, published under the title *Slávy Dcera* (Daughter of Slava), and the final edition (1851) contained 645 sonnets, divided into five parts. The first three are superior to the others. This is a glorification of the Slavic race (*Sláva*), between whom and his "Mina" his heart is divided. Though uneven in composition, the work in many parts rises to heights of passionate enthusiasm. It was written in Czech with a considerable admixture of Middle Slovenian peculiarities, which laid the foundations of the present Slovak literary language. His love for the Slavs impelled him to devote himself to collecting folk songs, at first (1822 and 1827) in collaboration with Safarik (qv) and later (1834-35) alone. The results of his labors appeared under the title *Popular Songs of the Slovaks in Hungary*. After years of efforts, with the help of the Austrian government, Kollár obtained for his native Slovaks from the Magyars the independence of their schools in 1820 and the church in 1833. In 1837 he published his work *Ueber die litterarische Wechselseitigkeit zwischen die verschiedenen Stammen und Mundarten der slavischen Nation* (2d ed., 1884). In 1852 he published a work, *Staroitalia Slavjanská*, in which he upheld the fantastic theory that Italy was originally populated by Slavic tribes. After continuous annoyances he removed from Pest to Vienna. Here he was a confidential adviser of the government, and the Slovaks of Hungary hailed him as their literary spokesman. In 1849 he was appointed professor of Slavic archaeology in the University of Vienna, which position he held

until his death. A posthumous edition of his works appeared in Prague (4 vols., 1862-64). It is incomplete, but it contains an autobiography dealing with the earlier part of his life. Consult Novák, *Die českische Litteratur der Gegenwart* (Leipzig, 1907), and Jagić, *Istoriia Slavianskoi Filologii* (St Petersburg, 1910).

KÖLLIKER, kō'li-kēr, RUDOLPH ALBERT VON (1817-1905). A celebrated Swiss anatomist and physiologist, born in Zurich. He studied at the universities of Zurich, Bonn, and Berlin. Rarely equaled in versatility, as a young man he was noted as an athlete, hunter, and mountain climber, at 22 he was attending the Latin clinical lectures of Nasse, and at 27 he became professor of comparative anatomy at Zurich. In 1847 he was invited to the corresponding chair at Würzburg, a position which he held until 1902. He was a great linguist and a wide traveler, well known from Scotland to the Mediterranean as he searched for and studied the tissues of man and of other animals. He revolutionized the histology and microscopy of his day, demonstrated the independence of the sympathetic nervous system, showed that the nerve fibres are continuations of nerve cells, wrote on the tissues of the tadpole and the embryology of man and chick, and studied the action of poisons. Although always a teacher, Kölliker was also always a learner; at 70 he went to Pavia to study Golgi's new methods of nerve staining. When 80 years old, he had published 245 papers in English, German, and Italian. Among honors from the learned societies of the world, in 1897 he received the Copley medal of the Royal Society, London. Prince Leopold of Bavaria bestowed on him the title Excellenz. Greatly beloved in Würzburg, it was there that Kölliker died of pneumonia, Nov 13, 1905. Among his principal works are: *Mikroskopische Anatomie* (1850-54), a *Handbuch der Gewebelehre des Menschen* (1852, 6th ed, 1889-96), which has been translated for the Sydenham Society by Bush and Huxley, under the title of *A Manual of Human Histology* (2 vols., 1853-54); *Die Siphonophoren oder Schwimmpolypen von Messina* (1853), *Entwicklungsgeschichte des Menschen* (1861). Kölliker was appointed one of the editors of the *Zeitschrift für wissenschaftliche Zoologie*, the most important scientific natural-history journal of Germany. Consult his *Erinnerungen aus meinem Leben* (Leipzig, 1899).

KOLLONTAJ, kō'lōn-toi, HUGO (1750-1812). A Polish politician, born at Niecislawice in Sandomir and educated at Pinczow and Cracow. He was ordained a Roman Catholic priest in 1770. After studying at Rome he engaged in educational reform in Poland, serving as rector of the University of Cracow in 1782-85. Turning his attention to politics, he was appointed *referendarius* of Lithuania in 1786 and was one of the most earnest leaders of the party of constitutional reform during the Four Years' Diet (1788-92). Under the new constitution of 1791 he was appointed Vice Chancellor. When the conservatives triumphed in 1792, he left the country, but returned to take part in Kosciuszko's insurrection. His radicalism was so pronounced that he even quarreled with Kosciuszko and was regarded by some Poles as a second Robespierre. After the failure of the insurrection he was imprisoned in Austria from 1795 to 1802. His writings (in Polish) include *Political Speeches as Vice-Chancellor* (6 vols.,

1791); *On the Erection and Fall of the Constitution of May* (1793); *Correspondence with T. Czacki* (1854); *Letters Written during the Emigration, 1792-1794* (1872).

KOLMAR, kōl'mär. The capital of the District of Upper Alsace in the German Reichsland of Alsace-Lorraine (Map: Germany, B 4). It stands on a plain near the Vosges, about 10 miles west of the Rhine, with which it is connected by the Rhine-Rhone Canal, and 41 miles south-southwest of Strassburg. Among the principal buildings are the cathedral of St. Martin, begun in the thirteenth century, a fine Gothic building, with interesting sculptures and a rare painting of the Madonna in a rose arbor, by Martin Schongauer; the old Dominican convent and church of Unterlinden, now used as a museum and containing the town library of 80,000 volumes, the courthouse and town hall. There are fine schools and monuments to the town's distinguished citizens. Vegetables, tobacco, and the vine are grown extensively around Kolmar, and it is a chief seat of the cotton and woolen manufacturing in Alsace. Other manufactures are silk, jute, cloth, thread, pottery, vehicles, sugar, starch, paper, leather, machinery, soap, candles, pipes, ribbons, and hosiery. The sculptor F. A. Bartholdi was a native of Kolmar, as was also the artist Martin Schongauer. Pop., 1900, 36,844, 1910, 43,808. Kolmar is probably the town known to the Romans as Columbarium. It was made a free Imperial city in 1226 and under a democratic form of government rapidly became one of the most prosperous cities in Upper Alsace. Fortified in 1552, its fortifications were razed in 1673 by Louis XIV. In 1678 it was ceded to France by the Peace of Nimwegen, but was restored to Germany in 1871 by the Peace of Frankfurt. Kolmar became French again for a short time, when Alsace was overrun in the first French offensive movement of the European War of 1914. In less than three weeks' time the German counter attack drove the invaders back into France. See WAR IN EUROPE. Consult *Annalen und Chronik von Kolmar* (Leipzig, 1897).

KOLO, kō'lō. A town in Russian Poland, located on an island in the Warthe River. It is 34 miles from the Prussian border (Map: Russia, A 4). In the last two decades various manufacturing industries have sprung up. Pop., 1910, 11,655. Kolo played an important strategic part in the European War, which began in 1914. The Germans reached the Warthe in their first drive on Warsaw and fortified it strongly, Kolo being the centre base and the point at which reinforcements crossed on their way to later drives on Warsaw. See WAR IN EUROPE.

KO'LOKOTRONIS, THEODOROS (1770-1843). A Greek general, born at Karytena, Arcadia. He fought successfully against the Turks at Tripolitza, Nauplia, Corinth, Patras, Argos, and in several other engagements, as a leader of the Klephts (q.v.). He became commander in chief in 1823 and Vice President of the Executive Council in 1825 under Capo d'Istria. After the latter's assassination he was elected (1831) provisional member of the government, but under Russian influence he turned against the existing régime. He joined in a conspiracy against the regency established during the minority of King Otho and was condemned to death for high treason in April, 1834. This sentence was commuted by Otho to imprisonment at Nauplia;

and when Otho began his reign (June 1, 1835) Kolokotronis received a full pardon and was restored to his rank as general. He lived thenceforth at Athens until his death. His autobiography was published in 1846 (in an English version, *Kolokotronis, the Klepht and the Warrior*, London, 1891).

KOL'OMAN, or **COLOMAN** (Hung. **KÁLMÁN**, kál'mán). An Hungarian king, who reigned from 1095 to 1116, and one of the most prominent members of the royal house of Árpád. Although illegitimate, he ascended the throne on the death of his uncle, Ladislas the Holy, and two years afterward suppressed an insurrection of the Croats. In 1102 he had himself crowned King of Croatia and Dalmatia. He spent the three following years conquering the Dalmatian seaport towns and also carried on a successful war against Galicia. His brother Almos, the legitimate heir, made repeated attempts to revolt, and in 1113 Koloman caused his brother and the latter's son Béla, later King Béla II, to be blinded. He was succeeded by his son, Stephen II. Consult Michael Horváth, *Geschichte Ungarns* (Ger. trans., 2d ed., 2 vols., Budapest, 1876).

KOLOMEA, kó'ló-má'a. A town in Galicia, Austria, situated on the Pruth, 42 miles by rail northwest of Czernowitz (Map: Austria, J 2). It has a town hall, a Gymnasium, and a forestry school. Pottery is the chief manufacture; it also makes textiles, refines petroleum, and there is a large trade in farm products. Pop., 1900, 34,188; 1910, 42,676, chiefly Jews and Poles.

KOLOM'NA. A river port and chief town of a district in the Government of Moscow, situated 75 miles southeast of the city of that name, on the river Moskva (Map: Russia, E 3). It has an ancient church of the Resurrection, two monasteries, two Gymnasias, hospitals, and a number of charitable institutions. In its vicinity are extensive copper and iron works, manufactures of engines, cars, steamers, etc. Weaving, ropemaking, silk spinning, and cotton printing are also carried on. The trade in grain is declining. Pop., 1912, 26,324. Kolomna is first mentioned in 1177, and the walls of the kremlin, built by Ivan the Terrible in 1533, can still be traced, while the Piatnitski Gate alone remains perfectly preserved. It was restored in 1825. The cathedral of the Assumption (1872) is the seat of an Orthodox bishop.

KOLOSH, kó-lósh'. See TLINKIT.

KOLTSOV, kól-tsóf', **ALEKSEY VASILEVITCH** (1808-42). An eminent Russian lyric poet. He was the son of a Voronezh tradesman and received little education. The first verses that came to his hands he sang to improvised tunes, believing that all verse ought to be sung. The study of Lomonosov, Derzhavin, Zhukovsky, and Pushkin had as its immediate result a number of imitations, which were severely criticized by Serebriansky, himself a gifted young poet. The latter was Koltsov's real instructor in literature. When about 20, he passed through an unfortunate love affair with a serf girl, whom his father immediately sold to a Cossack for fear of a misalliance. In 1831 his first published poems brought him many admirers, but with a volume of verse published in 1835 his fame suddenly assumed national proportions. About this time he visited St. Petersburg and Moscow, and met the great writers of the period. In 1837 Zhukovsky introduced him to Nicholas I

as a poet with a national reputation. After 1838 he was under the immediate guidance and protection of the celebrated Belinsky, who thought him superior even to Pushkin in some respects. After another love affair Koltsov fell sick and died in domestic neglect in 1842.

Aside from his first imitative lyrics, his work was entirely original. His songs of the second group, though simple in form, tone, and language, describe with wonderful art the beautiful southern nature of the steppes and the hard life of the Russian peasant. The themes and the facts are the same as in the "popular" songs, but the treatment is different, there are always the strong individuality of the poet, and a feeling of sincerity and spontaneity that is altogether wanting in the earlier ballads. Koltsov's poetry at that time showed no traces of oversentimentalism or pessimism. Even the hardships of serfdom did not disturb him in the least. Indeed, few other poets—not even Pushkin or Lermontov (qq v.)—infused their poems with such a hearty optimism and such winning courage as did this unschooled poet of the people—this Russian Burns, as he is sometimes called. The *Dumas* (Meditations), forming the third group, which deal with questions of faith, the universe, science, man and his moral destiny, are inferior to those of the preceding group. Though displaying the same external qualities and the same earnestness and depth of feeling, they raise all these great questions only to leave them unsolved; the poet had had very little philosophical training.

A complete edition of his poems, with a biography of the author, was published by Belinsky in 1846 (4th ed., 1863); the latest edition of his works is by Liashchenka (St. Petersburg, 1909), with letters to various people. Excellent German translations of most of his poems, by Fiedler, appeared in 1885 (*Universal-Bibliothek*, No 1971). Consult Rosa Newmarch, *Poetry and Progress in Russia* (London, 1907); Peter Schalfjew, *Die volkstümliche Dichtung A. Kol'covs und die russische Volkslyrik* (Berlin, 1910); and, for poems in English, Wiener's *Anthology* (New York, 1903).

KOLTZOFF-MASSALSKY, kól-tsóf'-má-sál'ski, PRINCESS. See DORA D'ISTRIA.

KOLUP, TILE. See HOLZSCHUH.

KOL'USHAN. See TLINKIT.

KOLYMA, kó-lé'má. A river of east Siberia, rising in the Stanovoi Mountains in the Territory of Yakutsk. It flows in a northeasterly direction and falls by three arms into the Arctic Ocean, about 1000 miles west of Bering Strait. Its total length is 1230 miles, navigable for over 700. It is ice-free from the end of May to the middle of September.

KOM, kóm. A town of Persia. See KUM.

KOMAROV, kó'má-róf', **ALEXANDER VISIONOVITCH** (1830-1904). A Russian general. He was educated at the St. Petersburg Military Academy, served as ensign in a regiment of chasseurs in the Hungarian campaign (1849), and went to Caucasia (1856) as état major of the Imperial Guard. Three years afterward he was made Governor of the Province of Derbent, then Governor of southern Daghestan, and at the close of the Russo-Turkish War was intrusted with the duty of restoring order in the districts of Kars and Batum, ceded by the Turks in 1878. From 1882 to 1890 he was in command of the troops engaged east of the Caspian Sea and in Central Asia. He subjugated the wild

tribes, occupied the Zulfikar Pass leading to Herat, and attacked the Afghans on the Kushk (March, 1885). The Russian advance led to concessions by the British government with respect to the boundary between Turkestan and Afghanistan. Komarov wrote several historical monographs and devoted considerable time to numismatics.

KOMENSKY, kô-mên'ski, J. A. See COMENIUS, JOHANN AMOS.

KOMORN, kô'mörn (Hung. **KOMÁROM**, kô'mä-róm). A royal free town with municipal rights, capital of the county of the same name, Hungary. It is situated on a small island at the confluence of the Waag with the Danube, 85 miles southeast of Vienna. It also includes the town of Új-Szony on the mainland (Map: Hungary, F 3). It is an irregularly built town, with a number of interesting churches, public buildings, and a considerable trade in grain, wine, wood, and fish. It is the seat of a Reformed bishop. The fortress, originally constructed under King Matthias Corvinus in the fifteenth century and considerably extended during the nineteenth, lies about a mile from the town. In the Hungarian Revolution it was brilliantly defended by Klapka against the Austrians and held out long after the surrender of the Hungarian army at Világos. Finally, on Sept. 27, 1849, Klapka capitulated, and on October 4 the fortress was handed over to the Austrians. Pop., 1900, 19,996; 1910, 22,337, mostly Catholic Magyars. Maurice Jókai, the novelist, was born here in 1825.

KOMPERT, kôm'pért, LEOPOLD (1822-86). An Austrian novelist, born at Munchengrätz, Bohemia, of Jewish parentage. He studied at the universities of Prague and Vienna, was in the meanwhile tutor in the family of Count Andrásy at Pressburg, and, drifting into journalistic work during the revolutionary movement of 1848, became editor of the *Oesterreichischer Lloyd*. From 1857 he devoted himself exclusively to literary work, making his home in Vienna. His tales, which are limited to the life of the Jews in their seclusion, are characterized by a poetic atmosphere and subtle delineation of character. They are embodied in the collections *Geschichten aus dem Ghetto* (1848, 3d ed., 1886), *Bohmische Juden* (1851), *Am Pfug* (1855); *Neue Geschichten aus dem Ghetto* (1860); *Geschichten einer Gasse* (1865); *Verstreute Geschichten* (1886), besides which he wrote the novels *Zwischen Ruinen* (1875) and *Franzi und Heini* (1880). A new edition of his collected works, *Gesammelte Schriften*, in eight volumes, was published at Leipzig in 1887. Consult article in *Allgemeine deutsche Biographie*, vol. li, pp. 750 et seq.

KOMUL. See HAMI.

KOMUNDUROS, A. See KUMUNDUROS, A.

KOMURA, kô'mû'râ, JUTARO, MARQUIS (1855-1911). A Japanese statesman and diplomat, born at Hyuga. He graduated at Harvard University in 1877, took a post in the Department of Justice, but was transferred to the Foreign Office in 1884. He was chargé d'affaires at Peking at the outbreak of the Chino-Japanese War in 1894, was later active in Korea, and from 1896 to 1898 was Assistant Foreign Minister. In the latter year he became Japanese Minister at Washington, in 1900 he went to St. Petersburg, and after the Boxer uprising he represented Japan at Peking. In November, 1901, he became Minister for Foreign Affairs in

the Katsura cabinet. He was senior Japanese Plenipotentiary at the Portsmouth Peace Conference in 1905. In his stand for the imposition of severe terms upon Russia he was overruled from Tokyo. Returning to Japan, he resumed his post as Foreign Minister, but retired with the rest of the cabinet in January, 1906. From August, 1906, to 1908 he served as Ambassador to Great Britain; he then returned to Japan to assume again the portfolio of Foreign Affairs, a post which he held until his death.

KONDRATOWICZ, kôn'drà-tô'vich, LUDWIK WLADYSŁAW (1823-62). A Polish poet and prose writer, who wrote under the nom de plume Syrokomla. He was born in Lithuania and hardly left his native village during his life, which was one of poverty. His first original volume of verse, *Bawardages* (1853), was characterized by easy, flowing rhythms, quiet humor, sincerity, and patriotism. *Margier* (1855) is considered his best poem and *Kaspar Karliński* his best play. He published also: *Urodzony Jan Dehoróg* (1854), full of reminiscences of the author's own life; *Zgon Acerna* (1856); *Janko Cmentarnik* (1856); *Nocleg hetmański* (1857); *Dzieje literatury w Polsce* (3 vols., 1852). His shorter poems, dealing with matters of everyday life, are especially noteworthy, his dramas being inferior. Kondratowicz rendered service to Polish literature by his translations from Polish authors who had written in Latin. A complete edition of his works (10 vols.) was published at Warsaw in 1872. He has been called the Polish Burns.

KONG. An important city in the French colony of Ivory Coast, Africa, capital of the district of the same name, in lat. 8° 53' N. and long 3° 30' W. (Map: Africa, D 4). It manufactures cotton goods and has a large trade in gold, salt, and cola nuts. Its population is estimated at 15,000, chiefly Mohammedans. It was first visited by Binger, a French captain, in 1888.

KONGO, kô'gô. A Bantu people of Congo-land, Angola, West Africa, whose territory extends from the lower Congo southward to about the parallel of Ambriz and from the coast inland to the Kwango River. Collectively they are known as the Ba Fiot or Ba Kongo and consist of nine tribes of varying degrees of culture, from the savage Mushi Kongo to the semicivilized Eshi Kongo. These tribes descend from the dominant race of the ancient Kongo kingdom and have preserved their historic traditions and customs, thus developing a nationality. Their language, which is the Mishi-Kongo, a Bantu idiom, is still used over a vast extent of country comprised in the former Kongo Empire. Towards the close of the eighteenth century, after the expulsion of the Jesuit missionaries, the Empire fell to pieces and is now a Portuguese dependency. Consult: Monteiro, *Angola and the River Congo* (London, 1875); Pechuel-Loesche, *Die Loango-Expedition*, vol. iii (Stuttgart, 1907); Struyf, *Uit den Kunstschat der Bakongos* (Amsterdam, 1908); Johnston, *George Grenfell and the Congo* (London, 1908).

KONGSBERG, kô'ngs'bär-y'. A mountain town in the County of Buskerud, Norway, situated on the Laagen, 52 miles southwest of Christiania. The town was founded in 1623 by Christian IV, owing to the discovery of a silver mine. The mines are owned and operated by the state, which also has a smelter, a mint, and a manufactory of arms and powder. About 180,000

ounces of fine silver are produced annually. Pop., 1901, 5585; 1911, 6132.

KONI, kō'ně, FEDOR ALEXIEVITCH (1809-79). A Russian playwright, born in Moscow. Beginning with *Zenikh po Dovernosti* (A Bridegroom by Proxy; 1833), he adapted, translated, or composed about 50 vaudevilles, which were collected in two volumes (1870-71). He published also translations and books for young people.

KO'NIEH, kō'nī-e, or **KONIAH**, kō'ně-ā. The capital of the vilayet of the same name in Asiatic Turkey, situated on the west edge of the plain of Lycaonia, at an altitude of over 3300 feet, about 150 miles south of Angora (Map: Turkey in Asia, B 3). The town has little to attract in its appearance except its irrigated gardens. It possesses several fine mosques and a famous monastery of the Mawlawi (dancing) dervishes, with the tomb of the founder of the order. It produces carpets and leather and carries on a considerable trade in minerals, in which the surrounding country is rich. It is connected by railway with Smyrna and Scutari (Constantinople). Its population is estimated at 50,000, chiefly Turks, Armenians, and Greeks. Koniah is the ancient Iconium. Under the Persian Empire it was considered the frontier city of Phrygia (cf. Xenophon, *Anabasis*, i, 2, 19). The Romans joined it to Lycaonia and made it the centre of that district. Paul and Barnabas preached there, and at that time it seems to have had a considerable Jewish population (Acts xiii 51 et seq; cf. 2 Tim. iii. 11). It became the centre whence Christianity spread throughout south Galatia. In Byzantine times it was the seat of the Archbishop of Lycaonia. A Church council was held there in 235. The Seljuk Turks captured the city about 1063, and under them it became the capital of the Sultanate of Iconium, or Brun, which lasted until 1283. The most important remains of Seljuk architecture are found there. The city was captured by Frederick Barbarossa in 1190. It fell into the hands of the Ottoman Turks under Mohammed II in 1472. In 1832 it was occupied by Ibrahim Pasha, who administered a severe defeat to the Turkish general, Reshid Pasha, not far from its walls.

KÖNIG, kē'nīk, EWALD AUGUST (1833-88). A German novelist, whose pseudonym was Ernst Kaiser, born at Barmen, where he was for a time engaged in mercantile pursuits. Afterward he settled at Elberfeld, Neuwied, and in 1882 at Cologne. Of his numerous novels, for the greater part dealing with criminal incidents, the following are the most noteworthy: *Durch Kampf zum Frieden* (1869), which was awarded a prize by the *Belletristisches Journal* in New York; *Auf der Bahn des Verbrechens* (1876); *Schuldig?* (1878); *Schuld und Sühne* (1880); *Ein verlorenes Leben* (1882); *Ein moderner Vampyr, socialer Roman* (1883); *Va banque!* (1884); *Um Glück und Dasein* (1885); *Die Tochter des Kommerzienrats* (1886); *Seines Glückes Schmied* (1888); *Unter schwarzem Verdacht* (1888); besides which he also wrote a number of humorous sketches of military and mercantile life, as *Humoresken und Erzählungen* (1877).

KÖNIG, FRIEDRICH (1774-1833). A German printer, born at Eisleben. He devoted himself to the means of printing by machinery, and after various disappointments Thomas Bensley, a printer in London, came to his support (1807),

a company was formed, and a patent obtained (1810) for a press, which, like the hand press, printed by two flat plates. It was first used in 1811 to print part of the *Annual Register*. A second patent was obtained (1811), for a cylinder press, and in 1813 and 1814 other patents were obtained for additional improvements. This improved machine was soon adopted by the proprietors of the London *Times*, whose number for Nov. 29, 1814, was the first to be printed upon it. In the latter part of his life König was a partner in a company for making steam printing presses at Oberzell, near Würzburg, in Bavaria. Consult the life by Goebel (Stuttgart, 1883).

KÖNIG, FRIEDRICH EDUARD (1846-). A German Semitic scholar. He was born in Reichenbach and was educated at the University of Leipzig, where he became docent in 1879 and professor in 1885. In 1888 he became professor at Rostock and in 1900 at Bonn. He attempted to apply the phonetic and physiological methods of modern philology to Hebrew and Ethiopic in such works as *Gedanke, Laut, und Akzent als die drei Faktoren der Sprachbildung* (1874), *Neue Studien über Schrift, Aussprache, und generelle Formenlehre des Aethiopischen* (1877), and *Historisch-kritisches Lehrgebäude der Hebraischen* (1881-97). Among his more general books are: *Religious History of Israel* (1885); *Neue Prinzipien der alttestamentlichen Kritik* (1902); *Geschichte des Reiches Gottes bis auf Jesus Christus* (1908); *Hebraisch-aramaisches Wörterbuch zum alten Testament* (1910), *Geschichte der alttestamentlichen Religion kritisch dargestellt* (1912).

KÖNIG, JOHAN GERHARD (1728-85). A Danish botanist. He was born in Livland, studied pharmacy and medicine, and afterward was a pupil of Linnæus, and in Denmark studied under Rottböll. He traveled in Iceland (1764-65) and wrote a *Flora Islandica*, but his greatest botanical labor was on Indian, and more especially Malabar, flora. In 1767 he went to Tranquebar, India, as a Danish medical missionary and died there. The genus *Koempfia* was named in his honor by Linnæus.

KÖNIG, OTTO (1838-). A German sculptor. He was born in Meissen, Saxony, and studied at the Dresden Academy and under Hähnel. In 1868 he was appointed professor at the School of Industrial Art at Vienna. His small statuette groups, which are especially popular, include many original and graceful designs for fountains and table services, such as the allegorical group "Water and Wine," modeled for the Austrian Emperor. Among his larger works are the funeral monument for his wife and three children, in the Evangelical Cemetery at Vienna, reliefs and a mourning "Victory" for the monument to the Emperor Maximilian of Mexico, at Pola; a life-size marble group, the "Love Secret," in the Museum of Historical Art, Munich; relief heads for the new City Hall and decorative sculptures for the Court Museum and Theatre, all in Vienna. His portrait busts include those of the Emperor Francis Joseph I (Austrian Museum) and Professor Leschetizky. He received the great gold medal at Munich in 1869 and a gold medal at Chicago in 1893.

KÖNIGGRÄTZ, kē'nī-gräts (Czech, *Hradeo Králové*). An old episcopal town and former fortress of Bohemia, Austria, situated in a fertile region at the confluence of the Adler with

the Elbe, 74 miles east of Prague (Map: Austria-Hungary, E 1). Its Gothic cathedral dates from the beginning of the fourteenth century, and the episcopal residence contains a fine library and a collection of portraits. The educational institutions of the town include a Gymnasium, founded in 1642, a theological seminary, an institute for teachers, a school of commerce, an industrial school, and a theatre. The town hall contains the municipal museum. Königgrätz has extensive manufactures of musical instruments, organs, roofing, soap, gloves, machinery, candles, and paints. It was a fortified town as far back as the eleventh century and suffered greatly during the Hussite and the Thirty Years' wars. Königgrätz is famous on account of the battle of July 3, 1866, in which the Austrians were overwhelmingly defeated by the Prussians, and which brought the Seven Weeks' War (q.v.) to a close. This is better known, however, in English as the battle of Sadowa (q.v.). Pop., 1900, 9800, 1910, 11,065.

KÖNIGINHOF, kē'nē-gīn-hōf'. A small manufacturing town of Bohemia, Austria, on the left bank of the Elbe, 20 miles by rail northeast of Königgrätz (Map: Austria-Hungary, E 1). It has several old churches, a Gymnasium, and a textile school. Linen and jute weaving and manufactures of cotton and print goods, leather, and beer are the principal branches of industry. Pop., 1900, 10,601; 1910, 15,051, mostly Czechs.

KÖNIGIN VON SABA, kē'nē-gīn fōn zā'bā, DīE (Ger., The Queen of Sheba). An opera by Goldmark (q.v.), first produced at Vienna, March 10, 1875, in the United States, Dec. 2, 1885 (New York).

KÖNIGSBERG, kē'nīks-bērk. A city of Prussia, capital of the Province of East Prussia, and a fortress of the first rank, situated on the Pregel, about 5 miles from its entrance into the Frisches Haff, in lat. 54° 43' N. and long. 20° 30' E. (Map: Germany, J 1). It lies on both banks of the Pregel and on a small island in the river and is composed of the three quarters of Altstadt and Löbenicht on the right bank and Kneiphof on the island and of several former suburbs on both banks of the river. The fortifications, begun in 1843 and completed in 1905, consist of an inner wall connected with an outlying system of works, 12 detached forts (six on each bank of the river), and in addition two great forts, that of the Kaserne Kronprinz, on the east, and that of Friedrichsburg, on an island at the western end of the city. The chief public buildings are mainly in the old quarters on the right bank of the river. The Kneiphof is the best-laid-out portion of the city and contains the town hall and the residences of the wealthy merchants. The Gothic cathedral, also in this section, was begun in the fourteenth and completed in the sixteenth century and contains a fine choir; the cathedral was restored in 1856. In the adjoining Stoa Kantiana is the grave of Kant, who was a native of the town. The Schlosskirche (1592) is interesting as the place where Frederick I and William I were crowned. Above the church is the immense Moskowitzer-saal, one of the largest halls in Germany. Among the most prominent secular buildings is the castle (Schloss), situated in the Altstadt. It was begun in 1255 and is an extensive building containing government offices, the archives, and the Prussia Museum. The government buildings,

the exchange, and the university are modern buildings of architectural merit. Königsberg has a fine statue of Frederick I and a bronze monument to Kant. The university was founded in 1544, by Albert, first Duke of Prussia, and in the seventeenth century had 2000 students. The number in 1914 was about 1700. Its library contains 318,000 volumes. The frescoed Aula is noteworthy. The other educational institutions of the city include the royal Gymnasium, founded in 1698; the municipal Gymnasium of the Altstadt, founded in 1335 as a parochial school, the Kneiphof municipal Gymnasium, dating from 1304; the Wilhelmsgymnasium, two realschulen, a seminary for female teachers, and a number of art and special schools.

Königsberg is administered by a chief burgo-master, a burgomaster, and a board of magistrates of 25 and a municipal council of 102 members. The city owns the water works, a gas and an electric-light plant, and an abattoir. The manufactures comprise various iron products, including machinery and locomotives, wood products, spirits, tobacco and cigars, matches, pianos, amber goods, flour, cement, mineral waters, chemicals, toys, sugar, and marchpane. Königsberg is a very important centre in the commerce between Russia and Germany. The approach by water having been found inadequate for heavy ships, the important Königsberg Ship Canal, from the city to Pillau, 20 miles distant on the Bay of Danzig, was opened in 1901. The chief articles of trade are agricultural products, amber, tea, wood, spirits, petroleum, coal, colonial wares, leather products and chemicals. Königsberg is the centre of the Prussian amber trade. Pop., 1890, 161,666, 1900, 189,483 (chiefly Protestants, the Roman Catholics numbering 8465 and the Jews 3975), 1910 (census of December 1), 245,994. The area of the city at the 1911 census was 17 square miles.

The Altstadt of Königsberg owes its foundation to the Teutonic Knights. Destroyed by the Prussians in 1263, it was built on its present site and obtained municipal rights in 1286. Löbenicht and Kneiphof became cities in 1300 and 1327 respectively. In 1457 the castle of Königsberg became the residence of the Grand Masters of the Teutonic Order and from 1525 to 1618 was the residence of the dukes of Prussia. The three towns were united in 1724. In 1758 Königsberg was occupied by the Russians and in 1807 by the French. It was invested and bombarded by the Russians during the first Prussian campaign of the European War of 1914. They were forced to retire by the counter German offensive movement. See WAR IN EUROPE.

KÖNIGSHÜTTE, kē'nīks-hūt'e. A town in the Province of Silesia, Prussia, 35 miles east-northeast of Ratibor and about 7 miles from the Russian frontier (Map: Prussia, H 3). It has extensive smelting works and the largest coal mines in Silesia, with manufactures of car wheels, glass, and bridge materials. Pop., 1900, 57,919; 1910, 72,640, half of whom are Poles. Königshütte was formed in 1869 by consolidating various townships.

KÖNIGSKINDER, kē'nīks-kīn'dēr, DīE (Ger., The Royal Children). An opera by Humperdinck (q.v.), first produced in New York, Dec. 28, 1910; in Germany, Jan. 14, 1911 (Berlin).

KÖNIGSMARK, kē'nīks-märk. A Swedish family of German origin, whose members achieved

fame and notoriety in equal measure during the seventeenth and early eighteenth centuries.—**HANS CHRISTOPH**, Count Königsmark, field marshal in the Swedish service, was born at Kötzlin, Brandenburg, March 4, 1600. On the outbreak of the Thirty Years' War he served in the Imperial forces, but in 1630 entered the Swedish army, attaining the rank of colonel in 1635. In the following year he defeated the Imperialists and for a long time commanded the Swedish army in Westphalia. He was with Torstenson in 1642 and commanded the left wing at the battle of Breitenfeld (q.v.), November 2. He drove the Imperialists from Pomerania and captured Bremen and Verden in 1644; defeated the Saxons at Zeitz and forced the Elector to a truce. He supported Wrangel in Franconia (May, 1648) and commanded the Swedish forces in the final battle of the war at Prague. He was made a field marshal and hereditary count and appointed Governor of Bremen and Verden. He was taken prisoner in the war between Sweden and Poland (1656) and remained in captivity until the Peace of Oliva (1660). He died in Stockholm, March 8, 1663.—**PHILIPP CHRISTOPH**, Count Königsmark, a grandson of the preceding, born 1662, entered the service of the Elector of Hanover and became the lover of Sophia Dorothea, wife of the Crown Prince (afterward George I of England). This attachment was discovered, and Königsmark, as is supposed, was assassinated July 1, 1694. The mystery of this murder was never cleared, owing to the opposition of the Hanoverian court. Consult: Bulau, *Geheime Geschichten und ratzelhafte Menschen*, vol. xii (1864); Palmblad, *Briefwechsel des Grafen Königsmark und der Prinzessin Sophia Dorothea* (1847); W. H. Wilkins, *The Love of an Uncrowned Queen*.—**MARIA AURORA**, sister of the preceding, born at Stade, Sweden, about 1668, was a brilliant and beautiful woman, well acquainted with life in the courts of northern Germany. After her brother's mysterious disappearance she went to Dresden to enlist the aid of the Elector Augustus II of Saxony in rescuing her brother, if alive. She became the mistress of the Elector and the mother, by him, of Maurice of Saxony (q.v.). She afterward retired to the abbey of Quedlinburg, Prussian Saxony; lived at Berlin, Dresden, and Hamburg; and undertook a mission to Charles XII of Sweden at Narva, in behalf of Augustus II (1702). Voltaire considered her "the most famous woman of two centuries." She died at Quedlinburg in 1728. Consult: Pöllnitz, *La Saxe galante* (1734); Cramer, *Denkwürdigkeiten der Gräfin Maria Aurora von Königsmark* (2 vols., Leipzig, 1836); Palmblad, *Aurora Königsmark und ihre Verwandten* (6 vols., ib., 1848-53); Corvin-Wiersbitzky, *Maria Aurora, Gräfin von Königsmark* (ib., 1848); Heseckel, *Nachrichten zur Geschichte des Geschlechts der Grafen von Königsmark* (Berlin, 1854).

KÖNIGSTEIN, kō'nīk-stīn. A town of Saxony, Germany, on the Elbe, 22 miles by rail southeast of Dresden. It has a monument to the composer Julius Otto and is commanded by an old fortress, the only one in Saxony, situated at an altitude of nearly 800 feet above the Elbe, on a precipitous rock. It formerly afforded an asylum to the Saxon priors, with their treasures, in times of danger. The present fortifications were erected during 1589-1731. The fortress of Königstein was formerly considered impregnable and the town has often been called

the key to Bohemia. The town has manufactures of lumber, cellulose, paper, machinery, vinegar, and buttons. It also builds ships. Pop., 4274.

KÖNIGSWART, kō'nīks-vārt. A watering place of Bohemia, 2350 feet above the sea, 5 miles from Marienbad (Map: Austria, C 1). It has an old castle which has belonged to the Metternich family since the seventeenth century; it contains a valuable library of 30,000 volumes and numerous art treasures. There are five mineral springs, chalybeate and mud baths, and a Kurhaus. Pop., 2039.

KONINCK, or **CONINGH**, kō'nīnk. The name of several important Dutch and Flemish painters, more or less related.—The most important was **PHILIPS DE KONINCK** (1619-88), a Dutch landscape painter, born at Amsterdam. He was one of the most notable pupils of Rembrandt and painted portraits and landscapes; the landscapes are remarkable for their truth to nature, broad perspective, and striking treatment of light. It is believed he was a wide traveler, but the details of his life are not known. Lingelbach, Dirk van Bergen, and A. van der Velde sometimes painted the figures in his landscapes. A "Landscape" (1676) and "Entrance to a Forest," in the Amsterdam Museum, are fine examples of his work, and a "View of the Mouth of a River," in The Hague, with a replica in the National Gallery, London, and fine landscapes in the Berlin Gallery and the Metropolitan Museum, New York, should also be mentioned. His works have been frequently confused with those of his brother Jacob (1616-c.1708), a greatly inferior painter.

His fellow townsman, **SALOMON KONINCK** (1609-56), a genre, historical, and portrait painter, was a pupil of David Colyns and Nicolaas Moyaert, but afterward became an imitator of Rembrandt. Some of Koninck's best works have been attributed to this master, among them "Joseph Explaining Pharaoh's Dream," in the Schwerin Museum. He also left some excellent etchings in the manner of Rembrandt, notably the head of an old man.

DAVID DE KONINCK (1636-c.1699), a Flemish animal and still-life painter, was born at Antwerp. There he studied with Peter Boel and entered the Painter's Guild in 1663. After traveling in Germany and France, in 1670 he settled at Rome, where the frequent introduction of a rabbit in his paintings made him known as Ramelaer. He did not die at Rome, as is commonly stated, but returned to Antwerp in 1687 and removed to Brussels in 1699. His work resembles Jan Fyt's, but there is no proof of his being a pupil of that master, as is frequently stated. He is well represented in the museums of Amsterdam and Vienna.

KONINCK, **LAURENT GUILLAUME DE** (1809-87). A Belgian chemist and paleontologist, born at Louvain, where he studied medicine at the university. After studying chemistry in Paris, Berlin, and Giessen, he taught that subject at Ghent and Liège. At Liège University he was appointed professor of chemistry in 1856 and of paleontology in 1876. He became especially known for his investigations of the Paleozoic rocks and the Carboniferous fossils and limestones of Belgium. He was awarded the Wollaston medal of the Geological Society of London in 1875. His publications include: *Éléments de chimie inorganique* (1839); *Descriptions des animaux fossiles qui se trouvent dans le terrain carbonifère de Belgique* (2 parts,

1842-51); *Recherches sur les animaux fossiles* (2 parts, 1847-73).

KONINCK, PIERRE DE (also DE CONINCK and DECONING). A Flemish popular leader of the fourteenth century. He is described by Guizot as "a simple weaver, obscure, poor, undersized, and one-eyed, but valiant and eloquent in his Flemish tongue." He became the leader at Bruges of a revolt against the oppression of Philip IV (the Fair) of France. The other communes of Flanders assisted the movement, and about 20,000 troops were collected. Near Courtrai this force totally defeated the French army of about 50,000 commanded by Robert, Count d'Artois (July 11, 1302). The French loss was between 12,000 and 15,000. Koninck was lavishly rewarded and treated with distinction. French prestige in Europe was seriously affected by this reverse, and Philip fought an unsuccessful war of revenge, which culminated only in his acknowledgment of Flemish independence in 1305.

KONKAN. See CONCAN.

KONKOLY, kôn'kô-li, NIKOLAUS THIEGE VON (1842-). A Hungarian meteorologist and astronomer. He was born in Budapest and was educated in the university there and at Berlin. In 1871 he established the astrophysical observatory at O'Gyalla (near Komorn), known by his name and since 1899 a royal observatory. From 1879 to 1883 he edited the *Beobachtungen* of this observatory. Among Konkoly's important studies were some on the spectroscopic lines of meteors. He wrote: *Praktische Anleitung zur Anstellung astronomischen Beobachtungen* (1883), *Praktische Anleitung zur Himmelsphotographie* (1887), *Handbuch für Spektroskopiker* (1890).

KONOTOP, kô'nô-tôp'. A town in the government of Tchernigov, Russia, situated about 85 miles east-southeast of Tchernigov. It is a railroad junction and has a technical school, three fine Orthodox churches, and one Lutheran church. It carries on some trade in grain, honey, and wax. Pop., 1897, 19,406; 1912, 28,160.

KONOW, kô-nôw', STEN (1867-). A Norwegian philologist, born in Aurdal, Valdres, the son of a clergyman. He was educated at Christiania and at Halle, where he obtained the doctorate (1893), was assistant librarian in Berlin in 1894-97; became docent at Christiania in 1899, and in 1900 entered the Linguistic Survey of India as an assistant to G. A. Grierson, declining a call from Harvard University to become assistant professor of Sanskrit. He was government epigraphist of India in 1906-09 and then returned to Christiania, where he became professor of Indian philology in 1910. Konow carried on important excavations at Sârânâth (near Benares) in 1907 and 1908 and edited *Epigraphia Indica* from 1907 to 1913. He wrote on the relation of Prakrit dialects, edited various texts and versions, contributed to Grierson's *Linguistic Survey of India* five volumes on the Tibeto-Burman groups, and on the Munda, Dravidian, Bhil, and Marathi languages (1903-08), and published *Orken og oase, det inderside Asien* (1912) and a *Bashgali Dictionary* (1913).

KONRAD, kôn'rât. The name of several German emperors. See CONRAD.

KONRAD DER PFAFFE (the priest). A mediæval German poet, who flourished in the first half of the twelfth century. He was a priest in the service of Duke Henry the Proud of Bavaria

and wrote about 1131, probably at Ratisbon, the *Rolandslied*, a poetic paraphrase of the French *Chanson de Roland*, which he had first translated into Latin prose. It was edited by W. Grimm (Göttingen, 1838), with a valuable introduction, and by Bartsch (Leipzig, 1874). The adaptation of the *Kaiserchronik* about 1150 is also attributed to him. Consult Golther, *Das Rolandslied des Pfaffen Konrads* (Munich, 1887); W. Walt, *Der Pfaffe Konrad* (Wandsbeck, 1879); and an article in the *Allgemeine deutsche Biographie*, vol. xvi (Leipzig, 1882).

KONRADIN (kôn'râ-dên) OF SWABIA. The last of the Hohenstaufen. See CONRADIN.

KONRAD VON HOCHSTADEN, fôn hōg'-stâ-dên, or **HOSTADEN** (?-1261). A German ecclesiastic and statesman of the thirteenth century, under whom, as Archbishop of Cologne (1238-61), the cathedral of that city was begun (1248). He sided with Rome against Frederick II and attempted open opposition, but in 1242 was beaten, wounded, and captured. But he escaped, and crowned William of Holland as Emperor (1248), and after his death caused the selection of Richard of Cornwall, whom he crowned in 1257, as leader of the forces opposed to the Hohenstaufen party. His long quarrel with the city of Cologne came to an end in 1259, when he gained control of the town. His monument, of the fifteenth century, is in the St. John's Chapel of the Cologne Cathedral. Consult Carstairs, *Konrad von Hochstaden* (Cologne, 1880).

KONRAD VON MARBURG, mâr'burk (?-1233). A German Dominican priest, confessor to the wife of Louis IV of Thuringia, who was afterward canonized and is known as St. Elizabeth of Thuringia. Pope Gregory IX made him the archinquisitor for Germany, and his severe and indiscriminate treatment of heretics at last aroused the bishops and called forth the intervention of the Pope. He met his death by assassination near Marburg. Consult Kaltner, *Konrad von Marburg und die Inquisition in Deutschland* (Prague, 1882).

KONRAD VON MEGENBERG, mäg'en-bêrk (1309-78). A German author, born near Schweinfurt, Bavaria. He was rector of a school in Vienna in 1337, then lived at Ratisbon from 1342 first as parish priest, later as canon, and is best known as the author of *Das Buch der Natur* (c.1349), the first German natural history, based upon the *Liber de Naturis Rerum* of Thomas de Cantimpré. It was newly edited by Pfeiffer (Stuttgart, 1861) and in a High German version by Schulz (Greifswald, 1897).

KONRAD VON WÜRZBURG, vûrts'burk (died c.1287). A Middle High German epic poet, representing the latter stages of the court epic. Himself a burgher, he represents also the rise to prominence of that class and reaches over, as it were, from the Minnesingers to the Mastersingers. As an epic poet, he was the most brilliant of the pupils of Gottfried von Strassburg (q.v.). He lived on the upper Rhine, alternately at Strassburg and Basel, and wrote voluminously. Konrad owes much to Benoit de Sainte-More and Chrestien de Troyes. The more noteworthy of his epics are: *Der Schwanritter* (ed. by Roth, 1861, used by Wagner in the opera *Lohengrin*); *Die goldene Schmiede* (ed. by Grimm, 1840); *Der Welt Lohn* (ed. by Roth, 1843); and 40,000 verses on the Trojan War (*Trojanerkrieg*, ed. by Roth, Keller, and Bartsch, vol. lxxvii of the *Stuttgarter Literaturarischer Verein*, 1858), which, even then incom-

plete, was finished by an inferior poet; *Engelhart und Engeltrat* (ed. by Haupt, 1844; 2d ed., 1890). Consult: K. J. Petelenz, *Leben und Bedeutung Konrads von Würzburg* (Cracow, 1881); Joseph, *Konrads von Würzburg Klage der Kunst* (Strassburg, 1885); Franz Pfeiffer, in *Germania*, vol. xii (Vienna, 1867); Scherer, *History of German Literature*, translated by Conybeare, vol. i (New York, 1906); Walther Leppelt, *Der Titulierungsgebrauch in den Redesenen der Werke Gottfrieds von Strassburg und Konrads von Würzburg* (Glatz, 1912).

KONTA, kōn'tā, ALEXANDER (1862-). An American publicist. He was born at Budapest, Hungary, and graduated from the College of the Pius Brothers. He started a literary weekly in Budapest; traveled in Egypt, India, and Japan; came to the United States in 1887 and there engaged in business and literary undertakings. He founded the Modern Historic Records Association; translated and adapted several plays for the American stage, of which the best known was *The Devil*; and became known as a frequent contributor to the Hungarian-American press. In 1914 he was chairman of the Primary Law Committee of New York.

KONTI, kōn'tā, ISIDORE (1862-). An American sculptor. He was born in Vienna and studied there at the Imperial Academy and the Meisterschule of Professor Karl Kundmann. A scholarship enabled him to continue his studies for two years in Rome, and he came to the United States in 1890, establishing himself in New York. He was elected to the National Academy in 1909 and received a gold medal at the St. Louis Exposition in 1904. Konti became best known by his monumental decorative works in staff for the great American expositions. His first work was done for the Chicago World's Fair in 1893. For the Pan-American Exposition (Buffalo, 1901) he executed four colossal groups for the Temple of Music,—“Heroic Music,” “Lyric Music,” “Sacred Music,” and “Dance Music”; also “The Despotism Age,” a very spirited piece of work. For the St. Louis Exposition (1904) he modeled two grand cascade fountains, typifying the Atlantic and Pacific oceans, and numerous small decorative groups. Other examples of his decorative work include: two groups, “West Indies” and “North and East Rivers,” for the Dewey Arch, temporarily erected in New York; the McKinley Memorial, Philadelphia; and two groups for the International Bureau of American Republics Building (Pan-American Union), Washington. Of his many ideal figures, the best known are: “Pan and Cupid,” “Awakening of Spring,” “Inspiration,” “The Brook,” a fountain (1902), “Orpheus” (1908), “The Witch” (1910), “Young Mother” (1912). Konti's work is characterized by refinement of conception and charming decorative qualities, the composition being good, the execution spirited. In 1914 he was president of the National Sculpture Society.

KONZE, kōnz. See HARTBEEST.

KOO-CHAH-BEE, kōō-chā'bē. A food made by the Indians about Mono Lake and other alkaline lakes of the western United States from the pupæ of certain flies of the family Ephydride. See FLY.

KOO'DOO, or **KUDU** (African name). One of the largest and most numerous of African antelopes (*Strepsiceros strepsiceros*, or *kudu*). The general form is not so light and elegant as

that of many of the antelopes. The height is about 4 feet, and the length fully 8 feet, exclusive of the tail, which is moderately long and terminates in a tuft like that of an ox. The male is furnished with great horns, nearly 4 feet long and beautifully twisted in a wide spiral of two turns and a half, very thick at the base and there wrinkled and ringed. The female is smaller than the male and hornless. The general color is grayish brown, with a narrow white stripe along the middle of the back, and 8 or 10 similar stripes proceeding from it down the sides. The koodoo lives in small families of four or five, inhabiting chiefly the wooded parts of Africa from Abyssinia to Cape Colony, though it is now nearly exterminated in South Africa. It is easily domesticated, and it is one of the animals which probably man might with further efforts reduce to his service. Its flesh is highly esteemed. Consult: *Proceedings of the Zoölogical Society of London* (London, 1890); *The Field* (ib., Sept. 1, 1894); Roosevelt and Heller, *Life-Histories of African Game Animals* (New York, 1914). For full description, consult the authorities mentioned under ANTELOPE.



KODOO.

KOOKABURRA, kŭk'ā-bŭr'ā or kŭk'ā-bŭr'ā. See DACELO.

KOORDS. See KURDS.

KOOSO, kōōs'sō (Abyssinian name), **KOUSSO**, **KOSSO**, or **CUSSO**. A medicine used to expel the tapeworm. It consists of the dried flowers and unripe fruit of *Brayera anthelmintica*, a tree which is a native of Abyssinia. The product reaches the market in the form of compressed, greenish-yellow bunches, with a balsamic odor and an acrid, repulsive taste. Koosso contains a resin (koossin or tæniin), a volatile oil, and tannic acid. The resin is crystallizable, white or light yellow, soluble very sparingly in water, though freely in alcohol. It is the active principle of the drug, which yields 3 per cent of it. It is an efficient drug against the tapeworm. In ordinary doses it causes nausea, some abdominal pain, and purging. The worm is usually discharged dead with the last passages. See ANTHELMINTIC.

KOOTENAY, kōō'tā-nā. A tributary of the Columbia River, rising in the Rocky Mountains in British Columbia (Map: British Columbia, E 5). It flows south, passing through the states of Montana and Idaho, and then, turning north, reenters British territory. It passes through Kootenay Lake and joins the Columbia River after a course of about 400 miles through a wild and picturesque district. Owing to the tortuousness of its course and numerous rapids, its navigable importance is insignificant; steamers ply on Lake Kootenay between Kaslo and Lando. Rich deposits of iron and other minerals through the region give promise of future industrial development, and a railroad now parallels the entire length.

KOOTENAY, or **KOOTENAI**. A North American tribe of the Kitunahan Indian stock. See KUTENAI.

KOPEK. See COPECK.

KÖPENICK, kə'pe-nik. A town of Prussia. See CÖPENICK.

KÖPFEL, kēp'fel. See CAPITO.

KOPISCH, kō'pish, AUGUST (1799–1853). A German painter and poet, born at Breslau. He was an art student at Prague (1815), Vienna, and Dresden (1819–22); but an accident to his right hand prevented his painting and he turned his attention to poetry. A protracted sojourn in Italy, where skill in swimming enabled him and Ernst Fries to discover the famous Blue Grotto of Capri, resulted in his translation of Dante's *Divine Comedy* (1837) and of other Italian selections, published the following year. His own *Gedichte*, which are distinguished by a delightful humor, were issued in 1836. *Allerlei Geister*, in 1848; *Die Schlösser und Garten zu Potsdam*, in 1854, and his complete works in five volumes, in 1856. Many of his songs are still sung, as, e.g., *Als Noah aus dem Kasten war; Wenn man beim Wein sitzt*.

KOPITAR, kō'pē-tār, BARTHOLOMÆUS, or JERNEJ (1780–1844). A Slavic philologist of Slovene nationality. He was born in Carniola and was educated at the German Gymnasium at Laibach and also at Vienna, where he soon became a member of the staff of the Imperial Library, and finally its curator. In 1814 he was sent to Paris with the commission to recover the Slavic manuscripts taken by the French in 1809, and afterward traveled in Germany, England, and Italy. His fame as a philologist rests on his works: *Grammatik der slawischen Sprache in Krain, Kärnten und Steiermark*, the first scientific Slavic grammar (1808); an edition of the *Glagolita Clozianus* (1836), in which, by adducing older forms, he attempts to prove the greater antiquity of the Glagolitic as compared with the Cyrillic alphabet, a theory which subsequent studies of Jagić (q.v.) confirmed, *Hesychii Glossographi Discipulus Rusus* (1839), an edition of a Glagolitic text of the eleventh or twelfth century; and the *Prolegomena Historica* to the edition of the *Texte du sacre*, which was published under the auspices of Czar Nicholas I (Paris, 1843). Kopitar made many enemies among the Czechs by his denial of the authenticity of the Kralove-Dvor (Königinhof) manuscript, and by his disapproval of the Panslavist idea. A great admirer of Slavic folk songs, he exercised a profound influence on Vuk Karajitch (q.v.). A collected edition of his minor writings was undertaken by his pupil Miklosich (vol. i, 1857). Consult Jagić, *Briefwechsel zwischen Dobrowsky und Kopitar* (Berlin, 1885), and id., *Istorna Slavonskoj Filologiji* (St. Petersburg, 1910).

KOPP, kōp, GEORG (1837–1914). A German cardinal, born at Duderstadt and educated at Hildesheim. He entered the priesthood in 1862 and rose rapidly. In 1881 he was appointed Bishop of Fulda and actively inaugurated a policy of friendly relations between the church and the state. So successful was the programme that in 1886 and 1887, after his entrance into the Prussian House of Lords, "peace measures" were passed abating the severity of the famous May Laws. In 1887 he was appointed Prince-Bishop of Breslau, in which capacity he was also entitled to a seat in the Austrian Upper House. He was made a cardinal in 1893. In 1912 he celebrated his fiftieth anniversary as a priest and his twenty-fifth as a bishop. His *Hirtensbriefe 1887–1912* appeared in the latter year.

KOPP, HERMAN FRANZ MORITZ (1817–92)

A German chemist, born at Hanau. He studied at Marburg and Heidelberg, was appointed in 1853 professor of physics and chemistry at the University of Giessen, and was professor of chemistry at Heidelberg from 1864 until his death. Kopp was one of the earliest investigators in the field of physicochemistry, especially in regard to specific volumes. His writings include: *Geschichte der Chemie* (7 parts, 1843–75); *Die Entwicklung der Chemie in der neuern Zeit* (2 parts, 1871–73), *Die Alchimie in alterer und neuerer Zeit* (2 vols., 1886).

KOPF, JOSEPH EUTYCHIUS (1793–1866). A Swiss historian, born at Beromünster in the Canton of Lucerne. He studied philology in Freiburg (Baden), was professor of Greek at the Lyceum of Lucerne from 1819 to 1841, and was president of the Swiss Council of Education from 1841 to 1845, when he retired on account of the opposition excited by his hostility to the Jesuits. He devoted much labor to the study of the history of the Swiss Federation and is the founder of scientific investigation concerning Swiss history. It was through his careful study of early documents that the story of William Tell was first shown to be legendary. His *Geschichte der eidgenössischen Bünde* (1845–49; last ed., 1882) is considered his most valuable work. He also published *Ämtliche Sammlung der altern eidgenössischen Abschiede* (1839). Consult Lüttolf, *Joseph Eutychnus Kopp* (Lucerne, 1868).

KÖPPEN, kēp'pen, PETER IVANOVITCH (1793–1864). A Russian statistician and archaeologist, born at Kharkov. He was educated at the university of his native city, made numerous journeys to investigate the ethnology, archaeology, and history of Russia, and, aided by the ancient manuscripts collected during his travels, he began soon after 1818 to publish the results of his researches in German. While most of these are included among the memoirs of the Academy of St. Petersburg, of which he was a member, mention should be made of his *Kulturgeschichte Russlands* (1825) and his *Geschichte des Weinbaues und Weinhandels in Russland* (1832). He is probably best known, however, for his *Ethnographische Karte des europäischen Russlands*, published (4 vols., 1851) by the Russian Society of Geography, and by his memoir on the ninth census of Russia (1856).

KÖPPEN, VLADIMIR PETER (1846–). A Russian-German meteorologist, born at St. Petersburg and educated there, at Heidelberg, and at Leipzig. After a year in the Central Physical Observatory at St. Petersburg, he became connected with the German Naval Observatory at Hamburg, of which he was appointed meteorologist in 1875. In 1906 he was appointed counselor in the German Admiralty Office. His writings have appeared mainly in technical journals, especially the *Meteorologische Zeitschrift*, of which he was editor from 1884 to 1891. In 1891 he was made editor of the *Annalen der Hydrographie und maritimen Meteorologie*. His *Meteorologen II* appeared in 1912.

KOPRILI, KÖPRÜLÜ. See KIUPRILI.

KOPTOS (Gk. Κοπτός, Lat. *Coptos*). The Greek name of the modern Koft (better Quft), a town of Upper Egypt, on the right bank of the Nile, 27 miles north of Luxor. It is now an unimportant town of about 2500 inhabitants, but in Greek and mediæval times it was a city of considerable importance as the starting point of the caravan routes to the ports on the Red Sea.

(Berenice and Myos Hormos), and therefore a centre of the trade with Arabia, India, etc. It was also famous for its quarries and gold mines. The siege and destruction of Koptos by Diocletian after a revolt in 292 A.D. were followed by a rapid revival of the city, which for a time was officially called Justinianopolis. Its decline began when Keneh took the traffic to the Red Sea. Excavations conducted near Koptos by Flinders Petrie in the winter of 1893-94 proved that this was a very old town. Monuments from all periods of Egyptian history were found in the temple of the ithyphallic local god Min—even statues from the prehistoric age. Consult Petrie, *Koptos* (London, 1896).

KORANĖS, or **CORANĖS**, *kô-rân's*, *Ger. pron.* *kâ'rēs*, *ADAMANTIOS*. See *CORAY*, *ADAMANTIOS*.

KORAN, *kô-rân* or *kô-rân'* (Ar. *kur'ân*, lesson, from *kara'a*, to read; cf. the later Heb. *Mikra*, the written Book, i.e., the Bible). The sacred book of the Mohammedans. The name was given by Mohammed himself to a single revelation, or a collection of revelations, and was afterward applied to the body of his utterances as gathered together in one book, forming the basis for the religious, social, civil, commercial, military, and legal regulation of Islam. The Koran is also known under various other names, such as *Furkân* (salvation), *Al-Muḥaf* (the volume), *Al-Kitâb* (the Book, in the sense of Bible), *Al-Dhikr* (the reminder, or the admonition).

According to the Orthodox views, the Koran is coeval with God, uncreated, eternal. Its first transcript was written from the beginning in rays of light upon a gigantic tablet resting by the throne of the Almighty, and upon this tablet are also found the divine decrees relating to things past and future. A copy of it, in a book bound in white silk, jewels, and gold, was brought down to the lowest heaven by the angel Gabriel, in the blissful and mysterious night of Al-Kadr, in the month of Ramadan. Portions of it were, during a space of 23 years, communicated to Mohammed, at both Mecca and Medina, either by Gabriel in human shape, "with the sound of bells," or through inspiration from the Holy Ghost, "in the Prophet's breast," or by God Himself, "veiled and unveiled, in waking or in the dreams of night." Traditions vary with respect to the length of the individual portions revealed at a time, between single letters, verses, and entire chapters (or suras). Setting aside the fanciful and semimystical speculations, there is general agreement among Mohammedans that the earliest revelation is represented by verses 1 to 5 of sura xvi, which begins with the words, "Read [or "proclaim"] in the name of thy Lord, who has created all things."

At the beginning of his career Mohammed did not make any efforts to have his utterances preserved. While it is possible that he was able to read and write, he certainly did not write any of the suras himself. It was only as his movement spread that the importance attached to the Prophet's revelations suggested the necessity of giving them a more permanent form, and in the second part of his career, after the flight to Medina (622), he appears systematically to have dictated his revelations to a scribe; and it would appear that he also revised the form of earlier utterances which had been either orally preserved or written down promiscuously by some of his zealous followers. Within a year of Mohammed's death (632) the first attempt at a

collection of the Prophet's utterances was made by Abu-bekr. He intrusted the task to Zaid ibn Thabit, the last secretary of Mohammed. Copies of these utterances already existed, and it was from these that Zaid prepared an authoritative compilation to be known henceforth as the Koran. This volume passed, after the death of Abu-bekr, into the hands of Omar, and by Omar was intrusted to the keeping of Hafsa, one of the Prophet's wives, the daughter of Omar. Differences of opinion in regard to the text of the Koran still prevailed after Zaid's edition was completed, and accordingly a second redaction was instituted in the thirtieth year of the Hejira by Caliph Othman, not for the sake of arranging and correcting the text, but in order to insure unity. This work was intrusted to four editors of recognized authority, of whom Zaid was one. With respect to the succession of the single chapters, 114 in number, no attempt was made at establishing continuity, but they were placed side by side according to their respective lengths; so that after the introductory exordium follows the longest chapter, and the others are ranged after it in decreasing size, though this principle is not strictly adhered to. They are not numbered in the manuscripts, but bear distinctive, often fanciful, headings; as: the Cow, the Fig, the Star, the Towers, Saba, the Poets, etc., taken from a particular matter or person treated of in the respective chapters. Every chapter or sura begins with the introductory formula, "In the name of God, the Merciful, the Compassionate." It is further stated at the beginning whether the sura was revealed at Mecca or at Medina. Every chapter is subdivided into smaller portions (*Ayah*, Heb. *Oth*, sign, letter), varying in the ancient copies (of Medina, Kufa, Basra, and Damascus, and the vulgar edition) between 6000 and 6036. The number of words in the whole book is 77,639, and an enumeration of the letters shows an amount of 323,015 of these. Other (encyclical) divisions of the book are into 30 *azâ* and into 60 *ahzâb*, for the use of devotional readings in and out of the mosque. Twenty-nine suras commence with certain letters of the alphabet, which are supposed by Mohammedans to be of mystic import, but which are probably monograms of private collectors or authorities.

The contents of the Koran as the basis of Mohammedanism will be considered under that head, while for questions more closely connected with authorship and chronology, consult *MOHAMMED*. Briefly it may be stated here that the chief doctrine laid down in it is the unity of God and the existence of but one true religion, with changeable ceremonies. As teachers and warners of mankind, God, at different times, sent prophets to lead back to truth, Moses, Jesus, and Mohammed being the most distinguished. Both punishments for the sinner and rewards for the pious are depicted with great diffuseness and exemplified chiefly by stories taken from the Bible, the apocryphal writings, the Midrash, and pre-Islamic history. Special laws and directions, admonitions to moral and divine virtues, more particularly to a complete and unconditional resignation to God's will (see *ISLAM*), legends, principally relating to the patriarchs and, almost without exception, borrowed from the Jewish writings (known to Mohammed by oral communication only, a circumstance which accounts for their frequent odd

confusion), form the bulk of the book, which throughout bears the most palpable traces of Jewish influence. Thus, of ideas and words taken bodily, with their Arabicized designations, from Judaism, may be mentioned: *Ḳur'ān* = *mikra* (reading), *furkān* (salvation); the introductory formula, *bismillah* (in the name of God); *taurāt* = *tōrah* (book of law); *jannah* = *gan eden* (paradise), *jahinām* (hell); *darasā* = *darash* (to search the scriptures), *subāt, sabbt* = *shabbāth* (day of rest), *sakinah* (majesty of God). It is especially in the later suras that Mohammed, for the edification of his hearers, introduced (in imitation of Jewish and Christian preachers) stories and legends of biblical personages.

The suras may be divided into three general classes: those delivered during the first years of Mohammed's preaching in Mecca, those delivered during the latter part of his stay in that city, and those delivered in Medina. In the oldest suras Mohammed is concerned mainly with describing the power and unity of God, the resurrection and the judgment day, the blessedness of paradise and the tortures of hell. These subjects are elaborated in the suras of the middle and last period. While in the earlier ones Mohammed claims to be only a preacher sent to warn people, in the later ones he steps forward boldly with the claim of being a divinely sent prophet, whose utterances represent revelations made to him by the angel Gabriel. The duties obligatory upon Moslems are all discussed in the later suras, though the formation into codes was reserved for the Mohammedan theologians. Incidentally his polemics against his personal enemies, and especially against Judaism and Christianity, are introduced into the Koran, the Jews being accused of falsifying the Scriptures, the Christians of running counter to the doctrine of the unity of God by the assumption that Jesus was a son of God. The discourses themselves are of a rambling nature, and numerous social customs are touched upon. In this way the Koran becomes a mirror in which Mohammed's personality is reflected with a clearness which leaves little to be desired. It properly was taken as the basis for the elaboration of a Mohammedan system of theology, for there is scarcely any topic connected with the law upon which it does not touch, though never exhaustively. Its lack of system and its discursiveness make the Koran hard reading, but its interest and value to the student are all the greater because of the assurance these very defects give us that we have in the Koran a work that is in all essential particulars authentic.

The general tendency and aim of the Koran is found clearly indicated in the beginning of the second chapter: "This is the book in which there is no doubt, a guidance for the pious, who believe in the *mysteries of faith*, who perform their *prayers*, give *alms* from what we have bestowed upon them, who believe in the *revelation* which we made unto thee, which was sent down to the *prophets before thee*, and who believe in the *future life*," etc. To present that revelation which had come to him and which had also been sent down to the former prophets was Mohammed's object; hence his attempts to find out what had been sought by the messengers of God who had been before him, and to distinguish between their original message and later additions and corruptions, especially in Judaism and Christianity. As his knowledge of these faiths

was extremely limited and his judgment wholly subjective, the Koran reveals a very arbitrary and vacillating attitude towards these. No less are certain abrogations of special passages in the Koran, made by the Prophet himself, due to the vacillating relation in which he at first stood to the different creeds.

The language of the Koran has become the ideal of classical Arabic, and no human pen is supposed to be capable of producing anything similar—a circumstance adduced by Mohammed himself as a clear proof of his mission. The style varies considerably, in the earlier suras concise and bold, sublime and majestic, impassioned, fluent, and harmonious; in the later ones verbose, sententious, obscure, tame, and prosy. There are passages of great beauty and power suggesting the Hebrew prophets. By means of the difference in style between the earlier and later suras modern investigators have endeavored to form a chronological arrangement. A general consensus has now been arrived at, though questions of detail must always remain in dispute, as many of the suras are composite in character. A great deal depends also upon internal evidence, which fortunately is found in considerable abundance. Mohammed, especially in the later years of his career, was in the habit of making allusions to events of the day, to his relations with Jews and Christians, to his ambitions and aims, into his discourses, and since, in addition to the Koran, we have the copious collections known as Hadith, containing utterances, sayings and doings, and decisions of Mohammed at the various periods of his career, it is in many cases possible to attach utterances in the Koran to specific occasions and thus fix the age of the sura in which a certain expression or opinion occurs, though the recent searching criticism of the Hadith (q.v.), especially by Lammens, has tended to render more uncertain our dependence upon this source. The Koran is written in prose, yet the two or more links of which a sentence is generally composed sometimes rhyme with each other, a peculiarity of speech (called *saj'*) used by the ancient soothsayers (*kuhhān-kōhēn*) of Arabia—only that Mohammed used his own discretion in remodeling its form and freeing it from conventional fetters, and thus the rhyme of the Koran became an entirely distinctive rhyme. Refrains are introduced in some suras, and plays upon words are not disdained.

The outward reverence in which the Koran is held throughout Mohammedanism is exceedingly great. It is never held below the girdle, never touched without previous purification; and an injunction to that effect is generally found on the cover which overlaps the boards, according to Eastern binding. It is consulted on weighty matters; sentences from it are inscribed on banners, doors, etc. Great lavishness is also displayed upon the material and the binding of the sacred volume. The copies for the wealthy are sometimes written in gold, and the covers blaze with gold and precious stones.

The Koran has been commented upon so often that the names of the commentators alone would fill pages. The most renowned are those of Zamakhshari (died 539 A.H.), Beidhawi (died 685 A.H. or 716), Mahalli (died 870 A.H.), and Suyuti (died 911 A.H.). The principal editions are those of Hinkelmann (Hamburg, 1694), Maracci (Padua, 1693), Flügel (Leipzig, 1883), and Fracassi (Milan, 1914), besides many edi-

tions (of small critical value) printed in St. Petersburg, Kazan, Teheran, Calcutta, Cawnpore, and Serampore, and by the many newly erected Indian presses. There is a chrestomathy with notes and vocabulary by Nallino (Leipzig, 1893). The first, but very imperfect, Latin version of the Koran was made by Robertus Retensis, an Englishman, in 1143 (ed., Basel, 1543). The principal translations are those of Maracci into Latin (1698); Sale (1st ed., 1734, one of the best translations in any language ed. by Wherry with additional matter, 1841-46), Rodwell (2d ed., 1876; 3d ed., New York, 1909), Palmer (1880), and Mohammed Abdu'l Hakim Khan (London, 1905) into English; Savary (1783), Garcin de Tassy (1829), Kazimirski (1840) into French; Megerlin (1772), Wahl (1828), Ullmann (1840), Grigull (1901), and Henning, in the Reclam *Universal-Bibliothek*, into German; Reckendorf into Hebrew (1857); Tollens into Dutch (1859); Aquilio Fracassi into Italian (Milan, 1914); besides a great number of Persian, Turkish, Malay, Hindustani, and other translations made for the benefit of the various Eastern Mohammedans. The attempt to reproduce the style and rhyme of the original was first made by J. von Hammer (1811); this was improved upon by A. Sprenger (1861-65), Fr. Rückert (1888), and M. Klamroth (1890). All of these are in German. *The Speeches and Table-Talk of the Prophet Mohammed*, chosen and translated by Stanley Lane-Poole (London, 1882), is a selection from the best that is in the Koran. Similar works are Murdock, *Selections from the Qoran with Introductions and Explanatory Notes* (London, 1902), and Wollaston. *The Religion of the Koran, Selections with an Introduction* (ib., 1904). Of concordances to the Koran may be mentioned that of Flügel (Leipzig, 1842) and the *Nojon-al Fortkan* (Calcutta, 1811); La Beaume, *Le Koran analysé* (Paris, 1878), is a topical index to the French translations of Kazimirski and others. There are Koran lexicons by Penrice (London, 1873) and Dieterici (2d ed., Berlin, 1894). The introduction and notes to Sale's translation contain material that is still of value, though in large measure superseded now by Nöldeke, *Geschichte des Korans* (Göttingen, 1860; 2d ed. by F. Schwally, *Erster Teil Ueber den Ursprung des Qorans*, Leipzig, 1909); Weil, *Historisch-kritische Einleitung in den Koran* (Bielefeld, 1844); Grimme, *Mohammed*, *Zweiter Teil: Einleitung in den Koran; System der koranischen Theologie* (1895); Hirschfeld, *Beiträge zur Erklärung des Korans* (Leipzig, 1886); id., *New Researches into the Composition and Exegesis of the Koran* (Eng. trans. (London, 1902); Tisdale, *Sources of the Qur'an* (London, 1905). Consult also the lives of Mohammed and other works mentioned in the articles MOHAMMED and MOHAMMEDANISM.

KORAT, kō-rāt'. A town of Siam, the capital and army headquarters of the Province of Nakawn Racha Sema, situated 165 miles northeast of Bangkok (Map: Siam, D 4). It is surrounded by a strong stone wall and in its vicinity are several copper mines and sugar plantations. It has a government sericulture office for the improvement of silk. Pop., about 7000, consisting of Burmese and natives of Laos and China.

KORDOFAN, kōr'dō-fān'. A province of the Anglo-Egyptian Sudan (q.v.), situated between the White Nile and the Province of Darfur and extending from long. 28° 30' to 33° E. and from

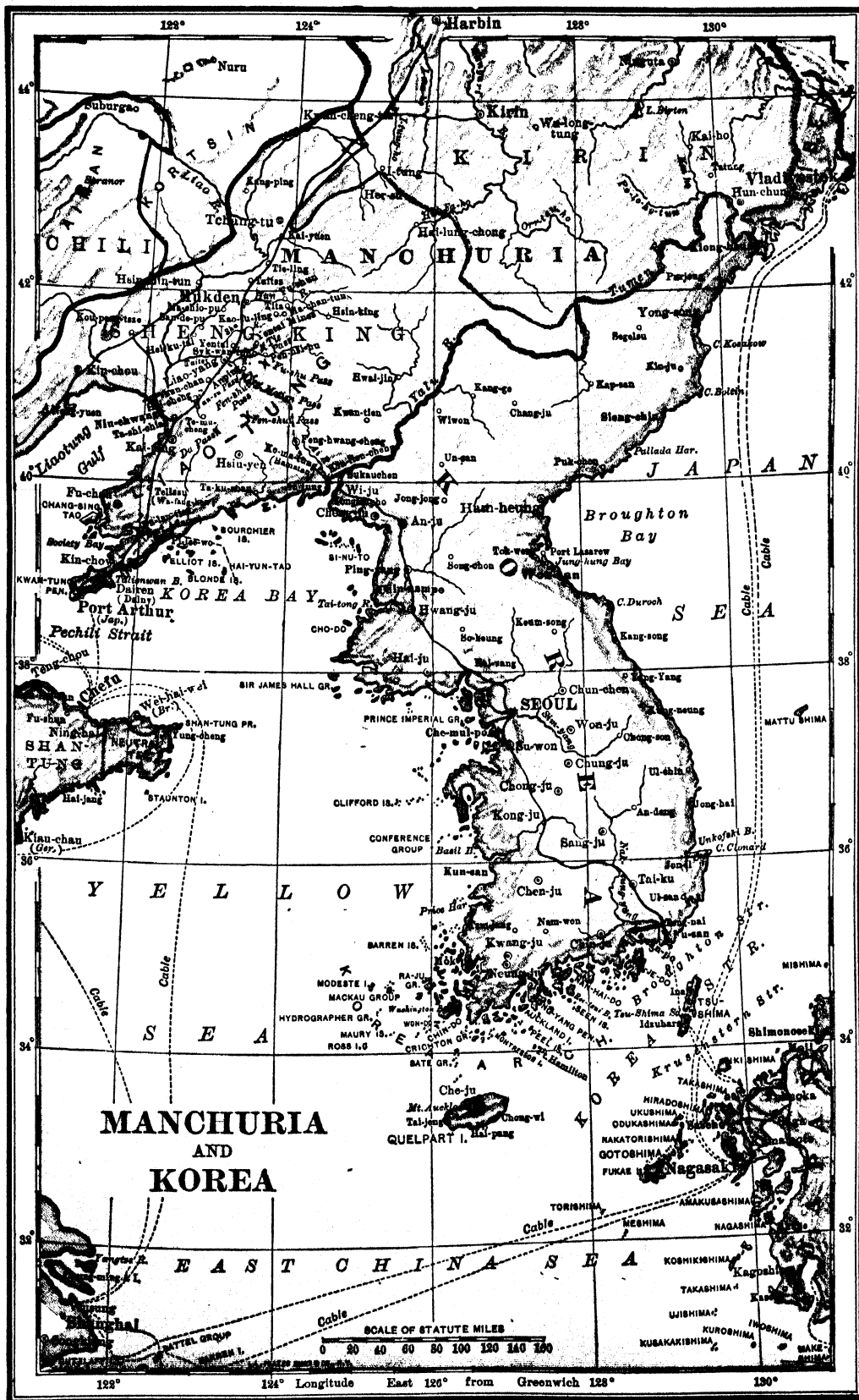
about lat. 12° to 16° N. (Map: Egypt, C 5). Area, about 130,000 square miles. The surface is flat, with a few isolated hills. During the dry season it is mostly barren, but with the advent of the rainy season, which usually lasts from June to October, it is covered with a rich vegetation. There are no rivers, but wells are abundant and generally serve both as centres for permanent settlements and as temporary camps for the nomadic tribes. The principal products are sesame, groundnuts, cotton, tobacco, gum, and a kind of millet. The chief products of commerce are ostrich feathers and gum. Pop., est., about 500,000, chiefly Arabs and Nubas. There are also several pagan negro tribes in the southern part. About one-half of the population is nomadic. Capital, El-Obeid (q.v.).

KOREA, kō-rē'a, **CHOSEN** (Korean Kori, Korye, or Koryū, the local pronunciation of *Kao-li*, the Chinese name of that one of the three kingdoms of the peninsula which became paramount towards the end of the tenth century). A possession of Japan, mostly in peninsular form, lying south and southeast of Manchuria and dividing the Sea of Japan from the Yellow Sea. It is bounded on the south by the Strait of Chosen, on the north by the Oryoku (Yalu), which rises in the Shanalin Mountains of Manchuria and flows southwest into the Yellow Sea, and by the Toman (Tumen), which rises near the same place and flows northeast and east into the Sea of Japan. It lies between the parallels 34° 17' and 43° N., and between the meridians 124° 38' and 130° 33' E. Chosen is about 600 miles in length, 135 miles in breadth, and has an area estimated at 84,420 square miles.

From about 960 A.D. the name of the country was Kori, or Koryū. In 1392, when the last dynasty was founded by one Li-tan, a still older name, Chō-sen, or Chosen (Chin *Chao-sen*, morning freshness or morning calm), was revived. In 1897 it was designated as Dai Han by the Koreans, and continued so until the annexation with Japan in 1910, from which date the official name has been Chosen.

Topography. The northern half of the country is very mountainous and well wooded, with peaks from 4000 to more than 8000 feet in height. The main axis of elevation, which forms the great backbone of the peninsula, lies along the whole eastern seaboard. The southern half is somewhat monotonous, the ridges and spurs thrown out by the main axis dwindling in height as they approach the west and south coasts. Near lat 37° a long chain runs southwest, ending in Hanra-san, an extinct volcano (6700 feet) on the island of Quelpaert. From the main axis the surface falls off abruptly to the east. Towards the west the hills are almost destitute of trees and are scarred with gullies which open out into wide, monotonous, but fertile plains.

Owing to the narrowness of the country, there are no great rivers. The most important are (1) the Amnok (or Apnok), better known as the Yalu, but renamed Oryoku by the Japanese, which rises in the Pei-shan (Paik-tu-san, white head mountain), an extinct volcano, 8900 feet in height, in lat. 41° 59' N., and flows southwest into the Yellow Sea, forming in its course the northwest boundary of the country. It is navigable by seagoing junks for 30 miles from its mouth and by boats as far as Wi-wōn, 145 miles more. (2) The Daido (Korean Tai-dong) in



Heian Province, which is navigable by boats for 75 miles, as far as the important city of Heijo (Ping-yang) (173,273 inhabitants). (3) The Kan (Han), on which the capital is situated, which rises at a point only 30 miles from the Sea of Japan and flows westward to the Yellow Sea. A fleet of small steamers plies on it between Jinsen (Chemulpo), at its mouth, and the capital (55 or 60 miles), and boats ascend some 80 or 90 miles farther. (4) The Rakuto (Nak-dong), which flows from north to south through the provinces of Keishō, and empties into the Korean Strait near Fusan (q.v.) It is navigable for 140 miles by vessels drawing not more than 4½ feet. (5) The Mok-po (now Eisen), a small river which flows through the fertile Province of Zenla, and enters the sea at the open port of the same name in lat. 34° 47' N. and long. 126° 15' E. The only Korean river which flows into the Sea of Japan is the Toman (Tumen). The coast line measures 1740 miles. On the east the shores are steep and almost unbroken by estuaries or harbors. Gensan and Port Lazareff are the best, not only on this coast, but in Chosen. There are few islands on the east coast, but on the west and south the coasts are fringed with innumerable clusters, the largest of which are Quelpaert (Saishuto), off the south coast, and Kang-hwa, famous in Korean history, in the mouth of the Kan (Han) River. The best harbor on the south coast is that of Fusan (or in Korean Pusan). On the east coast the tides seldom rise more than a few feet, but on the west and south they are strong and dangerous, rising frequently to 35 feet, and receding with great rapidity, leaving great mud banks on which vessels are sometimes left high and dry.

Climate. On the whole the climate of Chosen is salubrious. It greatly resembles that of the opposite coast of China. This is especially true of the central and northern parts, where the winters are severe and the rivers freeze over. Snow covers the country from the middle of December until the end of February. In the south the skies are generally bright, and the early winter is as delightful as in Japan. The middle and late summer is rainy and hot. The temperature ranges from 5° F. in winter to 90° F. in July, with a summer average of about 75° F. The average annual rainfall is 36 inches; the average of the rainy season (June to September) 22 inches.

Flora. The flora is not extensive, nor is it brilliant in color. Azaleas, rhododendrons, clematis, and *Ampelopsis vitifolia* are found everywhere. Much timber is grown in the northern mountains, and there is a large lumbering industry. There are several species of pine, fir, oak, and maple. The lime ash, birch, mountain ash, dryandra (or wood-oil tree), willow, hornbeam, and bamboo are common to Chosen, Manchuria, and north China, and the *Broussonetia papyrifera*, or paper mulberry, is much cultivated. The fruits include the plum, peach, apple, pear, etc., of the Chinese varieties. Ginseng (*Aralia quinquefolia*) is a government monopoly, and large fields of it are grown.

Fauna. The animals include the tiger, leopard, bear, antelope, and several species of deer, fox, badger, tiger cat, squirrel, beaver, otter, marten, and sable; a variety of the Manchurian wolf is found in the north. Among birds are the black eagle, peregrine, hawk, kite, egret, crane, kestrel, the white and the pin ibis, heron,

crow, magpie, kingfisher, wood lark, oriole, thrush, and cuckoo, pheasant, goose, teal, mallard, mandarin duck, and turkey buzzard. The native horse is no bigger than a Shetland pony, while the ox is of immense size.

Geology and Mineral Resources. Little is known of the geology of the country. In general it may be stated that overlying the fundamental rocks—gneiss, crystalline and other schists, crystalline limestone, quartzite, etc.—are found strata of Cambrian and Carboniferous age, the repositories of the metallic ores of the country. The prevailing rocks are sandstone, slate, limestone, hornstone, and conglomerates, and among the intrusive eruptive rocks, granite, porphyries, gabbro, diorite, diabase, etc., best exemplified in the Heian provinces. Mesozoic rocks are found in the Province of Kōkai, and the Tertiary formations, which are of little extent, but which contain considerable lignitic coal, in the hill country around Weijo (Ping-yang) and in the Kankyō provinces. Basaltic lavas forming tablelands occur in several places, but the best example is in the Province of Kōgen.

Gold has long been obtained from the sands of the northern rivers, but it is only in recent years that the exploitation of the auriferous rocks has begun. The Japanese are making great efforts to develop the mines of the peninsula. After the annexation an official investigation was begun (April, 1911), which will eventually cover the entire country. Special inducements are offered to engage in the industry. Uniform mining laws and regulations were introduced in September, 1906, mining machinery was exempted from import duty, and in 1908 the export duties were removed from mining products. In 1912 the value of gold mined was \$4,689,285, silver \$16,000, copper \$1531, iron \$155,221, graphite \$82,309, and coal \$166,522. On Jan. 1, 1912, 801 concessions had been granted to different companies in mining proper and placer mining, of which there were 383 Japanese concessions and 324 Korean. The property of the United States concessionaires at Uhsan (Wonsan) covers over 800 square miles. Good anthracite coal has been found, and coal is mined near Heijo (Ping-yang). Foreign concessions are located mainly in the provinces of Kōgen, Heian, and Kankyō.

Fisheries. The seas surrounding the peninsula teem with fish, and fishing is an important industry. Salmon, cod, the delicate muchesteemed tai, haddock, halibut, whiting, ribbon fish, herrings, sardines, are among the varieties most frequently found. Sharks abound on the coast, and in the Sea of Japan blackfish and whales are plentiful. Whale fishing is carried on by Japanese; before the Russo-Japanese War Russians also took part in this industry, but their whaling fleet was seized by the Japanese and the concession was granted to a Japanese company. Whale meat is an article of food and is exposed in the markets for sale. In 1911 the Japanese introduced new fishery laws and regulations, by which the pursuit of fishing was guaranteed to the natives, Japanese fishermen were encouraged to emigrate, fish were protected, and the industry in general was put on a firm basis. Indiscriminate catching was forbidden, also poaching and the use of trawlers. Financial aid is given by the central and provincial governments and the Imperial donation funds. Japanese and Koreans are put on an equality in rights. In 1911 there were 11,111 applications

for fishing permits received, and 8240 were granted. A total of 67,734 yen was appropriated by the government. The total number of Japanese boats, Jan. 1, 1912, was 5029, with 20,723 fishermen and a value of catch of 4,714,562 yen. Of Korean boats there were 10,833, with 118,920 fishermen and a value of catch of 4,320,883 yen, making a total value of marine products (including the Japanese whaling industry, 418,300 yen) of 9,450,000 yen. During 1911 a population of 9236 Japanese fishermen, in 62 villages, were encouraged to come to Chosen. The Chosen Marine Products Association, with its government subsidy (40,000 yen annually), rights, and regulations, is open to both races.

Agriculture. The soil of Chosen is very fertile, especially in the southern and southwestern provinces. Rice is the most valuable crop. The yield is usually large. Periods of drought, however, are frequent, and scant rainfall brings famine. The other agricultural products are barley, millet, and oats in the north, and in the south wheat, maize, beans, tobacco, cotton, hemp, and sesame. Sweet potatoes, the taro, cabbages, turnips, and other vegetables are also grown extensively, and form, with rice and the harder grains, the chief articles of diet. Milk, butter, and cheese are practically unknown to the natives, and until recent years no attention was given to cattle raising. In 1912 the rice crop was 44,348,100 bushels, a decrease of 4,136,000 bushels from 1911 because of severe floods. A superior Japanese rice has been introduced with success. It is estimated that there are 1,280,000 acres available for cotton culture. There is a revival in the cultivation of ginseng, which is highly prized by the Koreans for its supposed medicinal qualities. In 1913 the crop was 352,016 pounds, valued at \$40.86 a pound for the best quality. In 1912, 150,000 bushels of silk were produced. Other crops in 1912 were: beans, 16,727,300 bushels; millet, 22,329,000 bushels; barley, 20,075,800 bushels; wheat, 4,851,800 bushels; turnips, 1,078,254,000 pounds; potatoes, 255,001,200 pounds; cabbages, 516,504,000 pounds, cucumbers, 116,534,200 pounds. Since the protectorate the Japanese have instructed and encouraged the Koreans and immigrants in the use of improved methods of agriculture by establishing model farms, cotton-planting stations, a horticultural garden, seedling stations, and 116 sericulture training stations. Modern machinery is introduced and explained by trained lecturers. Irrigation is receiving much attention. In 1911, 124 per cent of the entire peninsula was cultivated land. Nearly 60 per cent of the total arable area was still waste land. By the Law of 1907 these unused lands will be rented or given to any Japanese, Korean, or foreigner who will utilize them. Live stock has been improved with choice breeds imported from Japan. Cattle raising is becoming an important industry. Government help is offered in all the agricultural pursuits, with favorable inducements to natives and immigrants. Afforestation is already bringing results. April 3 is celebrated every year as arbor day.

Manufactures. Since the Japanese occupation the manufactures of Chosen are being gradually developed. Paper making is the chief industry of the native Korean. Then come mat weaving, woodwork, bamboo screens, and hats. The Law of January, 1911, demands official permission to engage in industry. Since the law has been in force, up to March, 1912, there was

a total registration of 47 new corporations with 19 branch offices and a combined capital of 24,978,500 yen. These include 2 agricultural, 17 commerce, 11 industrial, 9 gas and electric, 6 transportation, and 1 mining company. The government is encouraging various industries by pecuniary assistance and often gives the necessary machines and implements. Among these are weaving, dyeing, and bamboo work, rope, paper, and pottery manufacture, and spinning. An attempt is being made to recover the hemp-tissue industry. Markets are very important in Korean daily life, for there the natives buy almost all of their food, clothing, and cattle. By Jan. 1, 1912, there was a total of 1084 markets, handling agricultural, marine, and textile products, live stock, and miscellaneous articles. Transactions amounted to 56,182,644 yen. Japanese weights and measures are used.

Communication. Before the annexation road making had received no attention in Chosen, and travelers were unanimous in denouncing the highways. Native Koreans traveled chiefly on horseback or in sedan chairs. Commodities were transported almost wholly by porters, pack horses, and oxen. Wheeled vehicles were practically unknown except in the open ports. The rivers, however, were and still are much used. (See *Topography*.) The Japanese have appropriated \$4,980,000 to extend over five years, beginning with 1911, for the improvement of roads and highways. This includes the most important roads in Chosen. At the capital, Keijō (Seoul), paved and macadamized thoroughfares are now being constructed, to replace the former miserable and unsanitary lanes. The estimated cost is \$6,474,000. The first railway in the country was from Jinsen (Chemulpo) to Keijō (Seoul), a distance of 26 miles. It now forms a branch of the Fusan-Keijō line (287 miles), which was completed in 1905 and nationalized in 1906. The line from Keijō to Shin-gishu (Shin-wiju), at the mouth of the Oryoku (Yalu), 300 miles, was completed in April, 1905. Another line, 130 miles long, runs from Keijō to Gensan (Wonsan), the principal port on the east coast. The total railway mileage in 1913 was 914 miles, with 4,399,022 passengers carried. Chosen railways connect with the Russian (Siberian) and Chinese lines. Triweekly train service was established (February, 1912) between Keijō and Changchun, Manchuria, a distance of 673 miles, and connecting at Changchun with the Trans-Siberian system. It is now possible to travel from Keijō to Moscow in 10 days, to Berlin in 11½, and to Paris in 12½ days. This line carries modern trains and first class only. From Keijō to Peking now takes only 2½ days. Keijō has a street railway, which runs in three directions to a total of nine miles outside the capital. In 1913 there were 3785 miles of telegraph, which connect with the Japanese and Chinese systems. Telephone service is established in Keijō and Jinsen. Post offices in 1913 numbered 485. There is efficient steamer and ferry connection between Chosen and Japan.

Commerce. Until the opening of the treaty ports Korean trade was almost exclusively with China, and carried on chiefly at the Korean Gate in Manchuria, where the tribute-bearing mission to Peking passed through Fung-hwang Ch'ing. Seaports now open to trade are Chinampo, Chemulpo, Fusan (Pusan), Gensan (Wonsan), Jōshin (Syong-jin), Kunsan, Mokpo, Seishin (Khyong-jin), and Taiko. Keijō and Heijō (Ping-yang)

are also considered open. Masan (Masampo) was closed to commerce, Jan 1, 1911, except to ships that touch at Japan or Japanese possessions. Most important of the treaty ports are Fusan, which leads in exports, and Jinsen, leading in imports, and situated on the west coast 26 miles by rail from Keijō. In 1912 the trade of Chosen with the world was as follows:

	Imports from, 1912	Exports to, 1912
Belgium	\$103,936	\$923
China	3,501,805	2,020,966
France	44,347	1,132
Germany	792,695	2,782
Japan	20,296,494	7,653,766
Russia in Asia	36,443	620,224
United Kingdom	4,879,186	98,475
United States	3,217,094	47,485
All others	551,493	4,984
Total	\$33,423,493	\$10,450,837

The total trade of Chosen in 1912 was \$43,874,330, as compared with \$11,613,334 in 1901. In 1913 the imports were \$35,932,000 and the exports \$15,288,000. Chief imports are cotton goods, iron ore and wares, liquors, machinery, fruit and nuts, kerosene, salt, sugar, matches, flour, paper, and tobacco; chief exports, rice, beans, cotton, hides, marine products, live stock, gold, iron, ginseng, timber and planks. Trade with the United States consists mainly in flour, iron and steel goods, kerosene, machinery, and meats. Imports from the United Kingdom are mainly cotton goods and metallic articles; from Germany, aniline dyes, machinery, and vehicles. Korean cattle and rice are shipped to Vladivostok. In 1912 the movements of specie and bullion were: exports, \$5,041,867; imports, \$733,760. Customs receipts for 1912 amounted to \$2,523,433, of which the export duties furnished \$210,772, import duties \$2,218,818, tonnage dues \$46,692, other sources \$47,151. In the same year 6052 ships entered the open ports, with 3,798,950 net tonnage. Japanese ships numbered 6001 of 3,688,841 tons, British 22 of 68,337, and German 11 ships of 38,252 tons. A consulate is maintained at Keijō by Belgium, Germany, Great Britain, Russia, and the United States. In addition the British have a consulate at Jinsen; the Chinese, at Fusan, Chinampo, Gensan, and Shingishu; and the Russians, at Jinsen, Masan, and a consulate agency at Gensan.

Banks. The Bank of Chosen was established in 1909. It operates as a central bank and a general institution and has an authorized capital of 10,000,000 yen (\$4,980,000). The head office is in Keijō, with 14 branch offices elsewhere, including one in Osaka, Japan, and another in Antung, China. There are also many agricultural and industrial banks, mainly to furnish loans. In 1911 there were 5 Japanese banks, with 16 branch offices and a paid-up capital of 16,300,000 yen; 3 Korean banks, with 7 branch offices and a paid-up capital of 1,122,813 yen. The Hongkong and Shanghai Banking Corporation and the Russo-Korean Bank are represented at Keijō. The growth in postal savings has been very rapid; in 1912 there were 338,176 depositors and deposits of \$2,406,924. An interesting institution is the Orient Development Company, which received a loan from Paris in 1912 of 20,000,000 yen. This corporation was

established to further industries in Chosen and encourage immigration from Japan. It was founded in 1908, with an authorized capital of 30,000,000 yen.

Government. Chosen is a possession of Japan. Until Jan. 7, 1895, it paid tribute, at least in theory, to China, and its kings always received investiture from the Chinese emperors. The government was based on that of China and consisted of a Grand Council of 3 ministers, and 6 boards, each with its own president and staff of officials, all appointed after examination. In 1895 the government was remodeled, the 6 boards, the examinations, and the privileges of the aristocracy were abolished, and a Grand Council of State was instituted, consisting of the 10 members of the cabinet and 5 councilors to discuss resolutions for the King to sign.

Since the annexation in 1910 Chosen has been administered through the Government-General and its affiliated offices. The staff of the Government-General consists of the Secretariat and the departments of General Affairs, Home Affairs, Finance, Agriculture, Commerce, and Industry, and Judicial. Affiliated to the Government-General are offices such as the Central Council, Old Usage Investigation Bureau, local governments, the law and police courts, prisons, railway, land investigation, customs, etc. The Central Council is chosen mainly from Koreans of ability and reputation, as a sort of consulting body to the Government-General.

As regards local government, in 1911 there were 12 prefectures in the 13 provinces, divided into 317 districts and 4351 villages. The lowest administrative division, as with China, is the village headman; then come the district and prefectural magistrates. Japanese clerks (*Hanjin* rank) of ability and experience are attached to the district magistrates as advisers and to train and guide the native clerks. The local administrations are being encouraged to manage themselves as much as possible, but financial help and advice are still furnished by the Government-General, as many of the localities are not self-supporting as yet.

The estimated revenue of Chosen for the fiscal year 1913 was placed at \$26,116,220. Of this amount, \$13,312,701 was derived from the ordinary revenue sources, \$380,142, the balance from the previous year; loans, \$6,273,077, and \$6,150,300 transferred to Chosen from the Imperial Japanese government. The increase in revenue over 1912 was \$1,957,446. A total of \$12,433,377 was necessary in assistance, as Chosen is not yet self-supporting because of the heavy outlay at present for the army garrison, the civil police and judicial departments, the railways, posts, harbors, roads, education, etc. Total expenditure for 1913 amounted to \$26,116,220. Out of this sum \$155,120 was estimated for communications, \$716,857 for railways, \$76,530 for the encouragement of industry, \$310,290 for land investigation, and \$88,563 for the Keijō water works. The present Korean coinage is divided into 5-sen nickel pieces and 20-sen and 50-sen silver pieces, similar in appearance to the Japanese coins of the same value, but with Korean emblems. The paper money in circulation is furnished by the Japanese Bank of Chosen. Over 40 per cent of the bank notes, Jan. 1, 1912, were of 1-yen denomination, in number 10,501,700. A bank note of small amount best fits the needs of the average Korean. At the end of 1912 the rate of interest

for bank deposits was raised from 4.2 to 5.4 per cent, in order to encourage the Koreans to save.

Law. On March 18, 1912, the Japanese civil code, commercial code, code of civil procedure, bankruptcy, and other laws were applied in their entirety to Chosen. A complete reorganization of the courts was likewise effected. For the time being, the ancient customary or common law remained where both parties were Koreans, but on April 1, 1912, the criminal code of Japan, the code of criminal procedure, and all kindred laws were extended over Chosen, and the ancient Korean criminal laws repealed. On Jan 1, 1912, there were 1 supreme court, 3 appeal courts, 8 local courts with 12 branch courts, and 68 district courts in Chosen.

Population. The official estimate of the population, January, 1913, was given as 14,827,101. Of this number, 14,566,783 were Koreans, 243,729 Japanese, 12,107 Chinese, and 989 of other nationalities, including 573 Americans, 189 British, 100 French, 49 Germans, and 26 Russians. The Japanese are emigrating rapidly to Chosen, but correspondingly a large number of Koreans are leaving the peninsula and settling in the neighboring Russian and Chinese territories. The distribution of the population by provinces is given below, together with the present official Japanese titles of the provinces and the corresponding Korean terms, of which there are many versions.

THE THIRTEEN PROVINCES		POPULATION — 1912				
Japanese	Korean	Korean	Japanese	Chinese	Others	Total
1 Keiki	Kyeng-keni	1,449,344	64,623	4,011	374	1,518,352
2 North Chusei	North Chung-cheng	592,653	3,578	148	17	596,396
3 South Chusei	South Chung-cheng	912,893	10,185	842	42	923,962
4 North Zenla	North Chyen-la	968,929	10,375	414	37	979,755
5 South Zenla	South Chyen-la	1,640,815	12,630	226	44	1,653,715
6 North Keishō	North Kyeng-syeng	1,657,448	12,100	178	39	1,669,775
7 South Keishō	South Kyeng-syeng	1,454,870	50,562	316	51	1,505,799
8 Kokai	H	1,010,782	5,139	431	59	1,016,411
9 South Heian	"	914,469	14,098	1,116	89	929,772
10 North Heian	"	999,022	6,851	3,183	142	1,009,198
11 Kōgen	Kang-won	850,110	2,968	45	12	853,135
12 South Kankyō	South Ham-kyeng	945,046	9,224	571	50	954,891
13 North Kankyō	North Ham-kyeng	435,995	8,346	356	11	444,708
Total,		13,832,376	210,689	11,837	967	14,055,869

Some of the most important towns, with their populations as estimated for 1911, are Seoul, 223,381, Fusan, 72,947, Kwangju, 42,910, Pingyang, 39,769; Haisyong, 38,025; Taiden, 32,822, Taiku, 31,140, Chemulpo, 26,187. Wonsan, 20,093, Chinguampo, 17,546, Luju, 17,391.

Religion. Buddhism entered the country at an early period, and Confucianism soon followed. From Chosen Buddhism spread to Japan, where it took firm root. It was a great power in Chosen for over 1000 years. At present the native Buddhism is ancestor worship, mixed up with astrology and with the worship of goblins and spirits. Its present influence over the people is small, and it is favored mainly by the women. The average Korean believes more in superstition than religion, while the higher classes favor ancestor worship and Confucianism. In the past religion in Chosen almost invariably has been used as a cloak for political purposes, not excluding Christianity. There are many different forms of beliefs, including Shamanism, animism, fetishism, and nature worship. One form of religion worships the Tan-gun, the first Korean King of legendary history. Christianity came

in 1775, through books sent by the Jesuit missionaries at Peking. In 1836 French missionaries made several thousand converts, but a persecution broke out, and in 1866 nine priests were executed at the capital. Chosen's efforts in the middle nineteenth century to remain the Hermit Kingdom were seconded by the interdiction of Christianity. Freedom of religion was finally guaranteed by treaties with foreign powers.

The present government allows complete religious liberty and does not interfere except with sects not purely religious. There are to-day some 13 denominations of Christianity, including the French Roman Catholic, the Russian Orthodox, and various Protestant denominations. The Y. M. C. A. at Keijo, established 1907, receives an annuity of 10,000 yen from the government. On Jan. 1, 1912, there were 2102 Christian churches and halls, with 207 foreign missionaries, 2311 native assistants, and 281,946 Christian converts. In no other Asiatic country has there been so general an acceptance of Christianity, a growth so rapid, or an influence so powerful on the national life. The Japanese are interested mainly in the revival of Buddhism and the introduction of Shintoism. Temples and shrines, Jan. 1, 1912, numbered 215, with 208 preachers and 90,370 converts, of whom 46,707 were Japanese and the rest Koreans. The total adherents of Buddhism and Confucianism cannot be given with accuracy. Religious disputes

are being amicably settled. The authorities are endeavoring to save the old temples and shrines from ruin. Church property as such is not subject to taxation.

Education. Under the old régime education was universally neglected, and not until 1894-95 was a concerted effort made to establish a responsible school system. The present Government-General has made a painstaking study of Chosen's needs in education. As a result, the school system to-day is divided into three classes—common, industrial, and special. The common school aims at knowledge necessary for daily life and for the awakening of national patriotism. In this branch the basis for the Koreans still is the Chinese classics, with as much knowledge as is possible of Japan and Japanese. Industrial education aims at the mastery of some technical trade or handicraft. The special class of schools includes the higher arts and sciences, together with law, medicine, agriculture, etc., and training in the special needs of Chosen. Girls are educated on an entire equality with boys. Statistics, up to March 31, 1912, are as follows:

Schools maintained solely for Japanese students numbered (March, 1912) 195, with 732 instructors and 21,287 students. The Koreans are very fond of private schools; these numbered 1721. There are 677 religious schools, conducted wholly or in part by foreign missionaries. Old-fashioned schools, such as give instruction to boys only, and solely in classics and ethics, are still numerous. The authorities are dealing as sympathetically as possible with these, so as not to offend the people, and worthy literati of the old type are frequently engaged as instructors. The scheme of education advocated by the Government-General retains much of Korean systems, such as the study of

folklore and mythology may be seen from Gale's article on "Korean Beliefs," in *Folk-Lore* (London, 1900), Allen, *Korean Tales*, and Arnous, *Koreas: Marchen und Legenden* (Leipzig, 1893). The extensive ethnological collections from Chosen in the United States National Museum at Washington have been described by Dr. Hough in the *Report* for 1891, while the *American Anthropologist* (Washington) for the same year contains an article by Rockhill, "Notes on Some of the Laws, Customs, and Superstitions of Korea." The very interesting games of the country have been made the subject of a valuable special monograph by Stewart Culin, *Korean Games, with Notes on the Corresponding Games*

SCHOOLS	No of schools	No of classes	INSTRUCTORS			Students	Graduates
			Japanese	Koreans	Total		
Common	306	916	370	888	1,258	32,385	3,150
Industrial	19	37	82	32	114	1,095	374
Special		5	50	19	69	1,000	345

Chinese classics, writing, and the Confucian ethics; these, however, are supplemented and strengthened by a knowledge of history, languages, other literatures, especially Japanese, and industrial and scientific training. The educational system of Chosen is being westernized as much as possible. The Imperial Rescript of Jan. 6, 1912, given to the schools of Japan, has been extended to Chosen and is read on certain days. In this document the Emperor exhorts the students towards filial piety, affection between brothers and sisters, husbands and wives, fidelity to friends, modesty of demeanor, pursuit of learning, cultivation of the arts, loyalty to the Empire, and respect for the laws.

Army. See under JAPAN

Ethnology. The position of Chosen between China and Japan makes its population of special interest to the ethnologist and accounts in part for their mixed racial character. Native traditions speak of two primitive races, the Siemp and the Sanhan—one the other perhaps more Aino-like—the dawn of the Christian era had been subjected by and had merged with the so-called Kaori, or Kaoli, the ruling people, from whom the country has been named. Some anthropologists hold that the Koreans were of more positive Asiatic type than the Japanese, but had sprung from the same stock as the ancestors of the latter. Others group Japanese and Koreans together, believing that the Koreans are intermediate between the continental and insular Mongoloid peoples. Still others regard them as a mixed race from Tungus, Indonesian, and Japanese elements. They are somewhat taller and more robust, with much lighter complexion and far more regular features than the average Mongol. In Chosen three marked types may be recognized: Korean-Manchu (nearer the European than is the real Mongolic) in the north and centre, Malayo-Mongolic in the south, and Aino (traces more or less) in the east towards Japan. Some have sought a Caucasian (white) element in the Koreans, but, unless the Aino represent a sort of proto-Caucasian stock of great antiquity in east Asia, this theory is very weak in evidence. Physically and otherwise the Koreans seem closely related to the people of the Loochoo Islands. The extent and character of Korean

of *China and Japan* (Philadelphia, 1895). Korean civilization undoubtedly owes much to China. Chosen, besides possessing indigenous culture elements, perceptible in mythology, social phenomena, medicine, folk literature, art, etc., has preserved a number of proto-Sinitic characters in an older form than is discoverable in either China or Japan. The Chinese elements in Korean life, also, are more Chinese than in China. Both upon China and Japan, in the matter of pottery especially, Chosen has exercised considerable influence, and Chinese recognition of the ceramic art of the Koreans finds expression in poetry of the Ming dynasty.

History. The beginnings of Korean history are associated with Ki-tse (q.v.), who is said to have founded a nation here some time after 1122 B.C. In 108 B.C. the country was annexed to the Chinese Empire. Soon after the Christian era, it was divided among three petty principalities called the San Han. About 960 one of them, called Kori or Koryu, became paramount and maintained its independence during a brilliant period of progress. In 1392, however, a palace revolution took place, which resulted in the overthrow of Buddhism, the banishing of the priests, and the establishment of the recent and last dynasty. In 1592 Hideyoshi (q.v.), the Japanese Regent, sent a large invading army into Chosen as a first step to the conquest of China. His armies overran the country as far north as Heijo (Ping-yang) and Gensan (Wonsan), but on the arrival of Chinese assistance Hideyoshi's troops were gradually driven southward, and in 1597 they were recalled. In 1627 the Manchus appeared and placed the country under vassalage, and from that date until 1894 a tribute-bearing mission annually visited Peking. In 1864 the King died without having named a successor. Yi-Hyong, then a child of 12, was chosen, and his father appointed Tai Wen Kun as Regent. For nine years he ruled with a rod of iron, persecuted the Christians (leading to a French expedition in 1866, which accomplished nothing), and rigorously enforced the policy of exclusiveness and the doctrine of "Korea for the Koreans." In 1871 a United States expedition, sent to inquire into the fate of a shipwrecked crew, was equally fruitless. It fell to the lot of the Japanese to be the first to

accelerated the absorption of the country into the Japanese Empire. On Aug. 23, 1910, came the end. Chosen was formally annexed, and the name Korea abolished. The Emperor was deposed, shorn of all political power, and given the name of Prince Yi. See JAPAN.

Bibliography. E. J. Oppert, *Forbidden Land: Voyages to the Korea* (London, 1880); W. E. Griffis, *Corea Without and Within* (Philadelphia, 1885); Percival Lowell, *Choson, the Land of the Morning Calm* (Boston, 1886); W. R. Carles, *Life in Corea* (London, 1888); Léon de Rosny, *Les Coréens* (Paris, 1888); W. G. Aston, "Corean Popular Literature," in *Asiatic Society of Japan*, vol. xviii (Tokyo, 1890); John Ross, *History of Corea, Ancient and Modern* (London, 1891); G. W. Gilmore, *Korea from its Capital* (Philadelphia, 1892); Walter F. V. Bernadou, Allen, and Jouy Korea, "in the United States National Museum," in *United States National Museum, Annual Report, 1891* (Washington, 1892); Cavendish and Goold-Adams, *Korea* (London, 1894); A. H. S. ... *Corea, or Cho-sen* (New York, ...); ... *Problems of the Far East* (rev. ed., ib., 1896); J. S. Gale, *Korean-English Dictionary* (Yokohama, 1897); I. B. Bishop, *Korea and her Neighbors* (New York, 1898); Villetard de Laguerie, *La Corée indépendante* (Paris, 1898); Gustave Braecke, "La Corée, sa situation économique et ses richesses minières," in *Revue Universelle des Mines*, vol. lix (3d series, Liège, 1902); H. N. Allen, *Korea, Fact and Fancy* (Seoul, 1904); Angus Hamilton, *Korea* (New York, 1904); W. W. Rockhill (ed.), *Treaties and Conventions with or concerning China and Korea, 1894-1904* (Washington, 1904); H. B. Hulbert, "Korean Language," in *Smithsonian Institution, Annual Report, 1903* (ib., 1904); id., *Comparative Grammar of the Korean Language and the Dravidian Languages of India* (Seoul, 1905); R. F. Cist, *Report on Trade Conditions in Japan and Korea* (Washington, 1906); H. B. Hulbert, *Passing of Korea* (New York, 1906); G. H. Jones, *Korea: The Land, People, and Customs* (ib., 1907); Sir H. Norman, *People and Politics of the Far East* (London, 1907); H. N. Allen, *Things Korean* (New York, 1908); G. T. Ladd, *In Korea with Marquis Ito* (London, 1908); F. A. McKenzie, *The Tragedy of Korea* (ib., 1908); G. H. Blakeslee (ed.), *China and the Far East*, Clark University Lectures (New York, 1910); C. G. D. Coulson, *Korea* (London, 1910); Hamilton and Austin, *Korea: Its History, its People, and its Commerce* (Oriental Series, Boston, 1910); Residency General in Korea, *National Progress of Korea for Last Five Years, 1905-1910* (Tokyo, 1910); W. E. Griffis, *Corea, the Hermit Nation* (9th ed., New York, 1911); E. G. Kemp, *Pace of Manchuria, Korea, and Russian Turkestan* (ib., 1911); J. H. Longford, *Story of Korea* (London, 1911); J. R. Moose, *Village Life in Korea* (Nashville, Tenn., 1911); René Terrion, *Le status international de la Corée antérieurement au 29 août 1910* (Paris, 1911); W. E. Griffis, *A Modern Pioneer in Korea: The Life Story of Henry G. Appenzeller* (New York, 1912); G. T. Ladd, "The Annexation of Korea," in *Yale Review*, vol. i (New Haven, 1912); Claude Madrial, *Northern China, the Valley of the Blue River, Korea* (Paris, 1912); *Korean Folk Tales*, translated by J. S. Gale (London, 1913); Wilhelm Haegheholz, *Korea und die Koreaner* (Stuttgart, 1913); R. M. Kelr, "Modern

Korea," in *American Geographical Society Bulletin*, vol. xlv (New York, 1914); T. P. Terry, *Japanese Empire, Including Korea and Formosa* (Boston, 1914).

KOREAN LANGUAGE. Korean belongs to the agglutinative class of languages and is intermediate between the Mongol-Tatar languages and the Japanese. It is entirely distinct, in both genius and structure, from Chinese, which has for many centuries been the literary language of the country and that used for governmental documents, correspondence, etc. Chinese has never been a spoken language in Korea, but innumerable words have been borrowed from it and incorporated into the native vocabulary. The sounds, however, differ widely from the sounds of modern Chinese. In grammar Korean is almost identical with Japanese, which stamps them as sister languages. In words, however, they are very dissimilar, barring those which both languages have taken from the Chinese.

In the native Korean there is no proper declension, case being indicated by certain separable particles (which taken by themselves have no meaning) affixed to the stem or root, the particles used for each particular case differing according as the last letter of the root is a consonant, a vowel, or the letter *l*, etc. The root itself is invariable. There is no proper plural, and genuine pronouns are nearly unknown. There is no grammatical gender, and there is no grammatical form by which living beings can be distinguished from things. The verb, however, cannot be surpassed in the variety and deftness of its expressive power. One-fifth of the words of the vocabulary are either verbs or words capable of taking a verbal form. There is no distinction between verb, adjective, and adverb, and even the preposition, which on syntactical grounds becomes a postposition, is a part of a verb. The grammatical variations are very numerous and are said to average 300. Some forms perform the functions of punctuation, and some are used to express emphasis; some are continuatives, expressing unfinished action. There are participial, gerundive, and interrogative forms, and forms expressing condition, hypothesis, etc. The verb has no number, and for the three persons there are three forms of civility (which ramify the verb in all its moods)—a common form used in speaking to inferiors, or of abstractions, or the like; a middle form used in speaking of or to equals; and a higher form used in addressing or in speaking of superiors.

Syntax depends largely on position, as in the Chinese written language. The word which governs is invariably placed after the word which is governed; the prepositions indicating case become postpositions; the adjective precedes the noun it qualifies, and the adverb precedes the adjective or verb; the dependent clause precedes the independent, and the noun precedes the verb which governs it.

The Korean alphabet, known as Onmun (the vulgar characters), consists of 11 vowels and 14 consonants. The letters are very simple and are made almost entirely of combinations of vertical and horizontal strokes. There is no letter *f*, *p* taking its place, and no *v* or *w*, which, however, are in the language and are otherwise provided for; *b*, *d*, *j*, *z*, and *g* are wanting, though discernible in speech in connection with certain euphonic changes, and there is only one letter for *r* and *l*, neither of which can begin a

word, their place being taken by *n*, so that Chinese *liang* (ounce) becomes *nyang*. A word may end with either a consonant or a vowel, differing in this respect from Japanese, in which every syllable is open. These letters are grouped into syllables, arranged in columns, which are read from right to left, as in Chinese. There is a cursive form used in the popular literature,

ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ
a	ya	e	ye	o	yo
ㅜ	ㅠ	ㅡ	ㅜ	ㅝ	
u	yu	i	eu	ä	
ㄱ	ㅋ	ㄷ	ㅌ	ㄴ	ㄹ
k	kh	t	th	n	l or r
ㅂ	ㅍ	ㅃ	ㅆ	ㅈ	ㅊ
p	ph	m	ch	chh	s
ㅎ	ㅇ				
h	ng final				

KOREAN ALPHABET.

etc. There is a wide difference in the written and spoken Korean languages, due to Chinese influence. Each has peculiar grammatical forms, and it is impossible to write down a conversation verbatim. There are no dialects in Korean. Each province, of course, has peculiarities in its speech, but, unlike China, a Korean can make himself understood in any part of the peninsula. The language is very musical, full of mimetic words, and the euphonic tendency is strongly marked. It lends itself readily to oratory, and the verb, usually coming last, allows of the proper climax.

Korean literature is mostly written in Chinese and consists of the Chinese classics and books relating to them, Chinese history and philosophy, works on government, ethics, and the like. Many of them are valuable and throw light on the interpretation of Chinese, as they are accompanied by the native syntactical apparatus and sometimes with translations in native Korean. The vernacular has long been despised by the learned as a vehicle of literary expression, and there is little of much value in Onmun. There is no drama, instead, the professional *kwang-da*, or story-teller, recites stories, some of which last for two days. There are no ballads; tales are numerous, history, and stories from the Chinese, moral treatises, and translations from standard Chinese works practically exhaust the list. Korean fiction is not of a high standard, but is read extensively by all classes, especially by the women. Korea has produced a few valuable works, chief among which is the *Pi-go*, an encyclopædia in 112 volumes. Poetry is all lyric. There is no Korean epic. Poetry deals mainly with nature and homely, rather trivial subjects. The native language, however, has already emerged from its obscurity. The new political changes of 1897 were proclaimed in Onmun.

Bibliography. Works on the subject are already quite numerous, but their value to the general reader is minimized by the great diversity of transliteration systems employed. The

appendix to Griffis, *Corea, the Hermit Nation* (9th ed., New York, 1911), gives much bibliographical information. The most useful works are: *Dictionnaire Coréen-français*, by the French missionaries (Yokohama, 1880), and *Grammaire Coréenne* (ib., 1881); Underwood, *Introduction to the Korean Spoken Language*, with a Korean-English vocabulary (ib., 1890). Scott, *Korean Manual* (Seoul, 1893). Gale, *Korean-English Dictionary* (London, 1897). *Han-Yong Cha Työn: A Korean-English Dictionary* (Yokohama, 1897); Allen, *Korean Tales* (New York, 1889); a rich mine of information in the *Korean Repository* (5 vols., Seoul, 1893-98) and its successor, the *Korean Review* (ib., 1901 et seq.), H. B. Hulbert, "The Korean Language," in *Smithsonian Institution, Annual Report*, 1904 (Washington, 1904); id., *The Passing of Korea* (New York, 1906). A. H. Lay, "Study of Korean from the Point of View of a Student of the Japanese Language," in *Asiatic Society of Japan, Transactions*, vol. xxxiv (Yokohama, 1906).

KOREN, kō'rën, JOHN (1861-). An American statistician, born at Decorah, Iowa. He graduated from Luther College in his native town and from the Concordia Seminary at St. Louis and then studied abroad. After 1884 he lived in Boston. For several years he was engaged in religious work; in 1891 he was special expert in Europe for the United States Bureau of Labor, and in 1893 he studied the Gothenburg system of controlling the liquor problem in Europe. He was employed by the Committee of Fifty to investigate the use of liquor in 1894-99 and later was engaged as an expert special agent by the United States Census Bureau. In 1913 he served as president of the American Statistical Association. His publications include: *Economic Aspect of the Liquor Problem* (1899); *The Liquor Problem in its Legislative Aspects*; and various official bulletins.

KO'RESHAN ECCLESIA, THE, or CHURCH ARCHTRUMPHANT. A communistic body, founded by Cyrus R. Teed (born in Utica, N. Y., 1839, and a physician by profession). The terms Koreshan, Koreshanite, etc., are derived from *Kōresh*, the Hebrew form of Cyrus. They have a community at Estero, Lee Co., Fla. They hold that the earth is a hollow sphere, upon the inner surface of which we live and within which the heavenly bodies move. It is claimed that Teed is "the new Messiah now in the world." They have an organ, *The Flaming Sword*, published at Estero. Consult Hinds, *American Communities* (Chicago, 1902).

KO'RIAKS (reindeer people). One of the northeastern members of the Siberian section of the Mongolian race. They inhabit the country (coast and interior) between the Tchukchis and the Kamtchadales and are in part fishermen and in part wandering or semisettled herdsmen, whose reindeer herds the reindeer has raised them above the level of some of the neighboring tribes, both physically and mentally. The Koriaks number some 5000 and are divided into several tribes. Some ethnologists include them in the Paleasiatic group, which consists of races once of more southern range, but now driven to the northeast by advancing peoples from the Asiatic interior. The languages of the Koriaks, Tchukchis, and Kamtchadales seem to be related. Consult: Kennan, *Tent Life in Siberia* (New York, 1870-79); Winkler, *Uralaltaische Völker und Sprachen* (Berlin, 1884); Jochelson, "The Koryak," in *Memoirs of the American Mu-*

seum of Natural History, vol. vi (New York, 1905).

KO'RIN (African name). The common gazelle (q.v.) of north Africa.

KORISTKA, kōr-zhist'ká, KARL VON (1825-1906). An Austrian geographer and technologist. He was born at Brünn in Moravia, studied at Vienna, and at an early age became a student in the school of mining and forestry at Schemnitz. In 1851-93 he was professor of mathematics and geodesy in the German polytechnical school at Prague. He exerted a wide influence in the development of the technical and professional schools of Austria. He was also much occupied in orographical and hypsometrical studies and explored several of the mountainous regions of Europe, where he obtained a large number of levels and heights. From 1867 to 1869 he was a representative in the Diet of Bohemia and in the Vienna Reichsrat. Besides numerous memoirs, mostly written in German and in French, he wrote for many reviews and journals. Among his principal works may be mentioned: *Studien über die Methoden und die Benutzung hypsometrischer Arbeiten* (Gotha, 1858); *Die Markgrafschaft Mahren und das Herzogtum Schlesien in ihren geographischen Verhältnissen* (Vienna, 1860); *Hypsometrie von Mahren und Schlesien* (Brunn, 1863); *Der höhere polytechnische Unterricht in Deutschland, der Schweiz, in Frankreich, Belgien und England* (Gotha, 1863); *Die Hohe Tatra* (ib., 1864); *Das Mittel- und Sandsteingebirge in Böhmen* (Prague, 1869); *Das Iser- und Raxengebirge* (ib., 1877); *Verzeichniss der trigonometrischen Höhen von Böhmen* (ib., 1884).

KÖRMÖCZBÁNYA, kër'mëts-bä'nyö See KREMINTZ.

KORN, kōrn, ARTHUR (1870-). A German physicist, born in Breslau and educated at the universities of Freiburg, Leipzig, Paris, and Berlin. In 1895 he became docent at Munich, where he was professor of physics in 1903-08. He then removed to Charlottenburg. His published writings and experiments cover many branches of physics and related mathematics, but he is probably best known for his work on the potential theory. Besides articles in German and French technical journals (especially the *Berichte der bayrischen Akademie* and *Comptes rendus de l'Académie des Sciences*) he published *Theorie der Gravitation und der elektrischen Erscheinungen auf Grundlage der Hydrodynamik* (2d ed., 1896); *Lehrbuch der Potentialtheorie* (1899-1901); *Freie und erzwungene Schwingungen* (1910); *Elektrische Fernphotographie* (2d ed., 1907); *Handbuch der Phototelegraphie und Telerographie* (1911), of particular importance because Korn devised a telephotographic system known by his name.

KORNEMANN, kōr'ne-män, ERNST (1868-). A German historian, born in Rosenthal and educated at Giessen and Berlin. In 1898 he became docent of ancient history at Giessen and in 1902 professor at Tübingen. With Lehmann-Haupt, of Liverpool, he founded in 1903 *Klio*, a periodical devoted to ancient history. Among his publications mention should be made of *Die historische Schriftstellerei des C. Asinius Pollio* (1896); *Zur Geschichte der Gracchenzeit* (1903); *Die neue Livysepitome aus Oxyrhynchus* (1904); *Kaiser Hadrian und der letzte grosse Historiker von Rom* (1905), in which he deals with the Augustan history and attempts to prove that Lollius Urbicus was a great his-

torian; *Priesterkodes in der Regia und die Entstehung der altromischen Pseudogeschichte* (1912).

KÖRNER, kër'nër, CHRISTIAN GOTTFRIED (1756-1831). A German jurist and friend of Schiller, born at Leipzig. He studied law at Gottingen and Leipzig and in 1783 became chief councillor of the consistory at Dresden, was appointed to the office of judge in the Court of Appeals in 1790, and in 1811 returned to the appellate court. His home was a gathering place for the literary men of the time. He corresponded with Goethe and was very intimate with Schiller, who lived with him much of the time between 1785 and 1787. During the Russian occupation of Leipzig he was Russian government counselor and then entered the Prussian service (1815) at Berlin, where he was state counselor and later Privy Counselor in the new Ministry of Education. His best-known work was the anonymous *Aesthetische Ansichten* (1808), but of greater importance is Schillers *Briefwechsel mit Körner* (ed. by Goedeke, Leipzig, 1874, by Geiger, Stuttgart, 1895-96). He also prepared the first collected edition of Schiller's works (1812-15) and *Poetischer Nachlass Theodor Körners* (1815). His collected works are edited by Stein (Leipzig, 1881). Consult Jonas, *Briefwechsel Wilhelms von Humboldt mit Körner* (Berlin, 1880), and id., *Körner, biographische Nachrichten über ihn und sein Haus* (ib., 1882).

KÖRNER, KARL THEODOR (1791-1813). A German poet, son of C. G. Körner, born in Dresden, Sept. 23, 1791. He studied mining engineering at Freiberg and law at Leipzig. In 1810 he published *Die Buds*, a volume of immature poems that were received with favor. He was appointed court dramatist at Vienna in 1813, but he gave up this career to enlist in the War of Liberation in Lützow's Free Corps. There he served as lieutenant and adjutant, and there he wrote his war songs, *Leier und Schwert* (1814), in which his genius and German patriotism find a high expression. The songs were set to music by Karl Maria von Weber and had much effect in the German warlike spirit. One of them, "Das Schwertlied," was composed but a few hours before his death in battle at Lützow, Aug. 26, 1813. Of Körner's dozen or more comedies and librettos, *Die Braut* (1812) and *Der grüne Domino* (1812) were very successful. *Zriny*, an historical drama, is the most ambitious of his works. His dramas show the influence of Schiller (q.v.) and Kotzebue (q.v.). The best editions of Körner are by Streckfuss (1834), Wolf (1858), Kofahl (1895), Wildenow (1900), and Gensichen (1902). His *Poetischer Nachlass* were edited by his father and published at Leipzig in 1815.

Bibliography. Biographical and critical studies are by Bauer (Stuttgart, 1883), Rogge (Wittenberg, 1891), Kregenbergl (Dresden, 1892), Jaden (ib., 1896), Peschel and Wildenow (Leipzig, 1898), A. Zipper, in *Reclam* (ib., 1900), and Peschel (Dresden, 1901). Consult also Zeiner, *Körner als Dramatiker* (Stockeran, 1900), and Strucker, *Beiträge zur kritischen Würdigung der dramatischen Dichtungen Körners* (no place, 1910).

KORNGOLD, kôrn'gôlt, ERICH (1897-). An Austrian composer, one of the most remarkable cases of musical precocity on record, born

May 29, 1897, at Braunau. He received his entire education from his father, the musical critic of a Vienna paper. When only 11 years of age, he wrote a pantomime, *Der Schneemann*, which was produced at the Royal Opera of Vienna in 1910. The following year Nikisch performed his *Ouverture zu einem Schauspiel*, op. 4, at one of the Gewandhaus concerts. Soon afterward the boy gave a concert in Berlin, which was attended by many noted musicians (Humperdinck, Sinding, Muck, Sembrich), who were unanimous in their admiration. The new works performed for the first time at this concert were a pianoforte sonata in E, a piano trio in D, and a suite for piano, *Märchenbilder*. The reception accorded the youthful composer was nothing short of sensational. In 1912 the New York Philharmonic Society, under Strinsky, played the overture, op. 4. Besides the compositions mentioned Korngold wrote a second pianoforte sonata in A, a sonata for piano and violin in G, a sinfonietta in B flat, and a three-act opera, *Der Ring des Polykrates* (1915). These works exhibit not only genuine inspiration, but also an astonishing skill in the development of the thematic material and the treatment of orchestral instruments. As yet the boy is decidedly under the influence of R. Strauss, but there are unmistakable touches of originality which hold out great promise for the future.

KOROLENKO, kôr'ô-lên'kô, VLADIMIR (1853-). A prominent Russian writer. Born in Zhitomir (Little Russia), of Cossack and Polish ancestry, he inherited the peculiar dreaminess of Little Russians and the perennial optimism of the Poles. The boy lost his father at 15, and at 17 entered the St. Petersburg Technological Institute and after a year the Moscow Academy of Agriculture, where he held a scholarship. For addressing a joint student petition to the director of the academy he was exiled to the Province of Vologda. Allowed to return after two years, he went to St. Petersburg, eking out a living as publisher's assistant. A series of governmental persecutions soon ensued, culminating in 1879 in his exile to Siberia. The six years spent by this most impressionable writer in the wilds of Siberia furnished him precious literary material for his inimitable Siberian sketches. Korolenko's literary career really began in 1885, when his highly original *Makar's Dream* was published. It was followed by *The Sakhalin Convict*; *In Bad Company*, an autobiographical romantic tale; *Memoirs of a Siberian Tourist*, a well-written picaresque novel, and *The Murmuring Forest*, a woodland idyl worthy of Turgenyev. But much as these works increased Korolenko's fame, it was his fascinating psychological novel, *The Blind Musician* (1886), that put him in the front rank of Russian writers of his time. Unfortunately the author did not follow up this artistic performance, and, save his *Prokhor and the Students*, an ambitious novel whose serial publication was interrupted by the censor in 1887, all his subsequent fiction was confined to short stories such as *At Night*, a study of child life; *The Old Bell-Ringer*, a beautiful -pump idyl; *Yom Kippur*, a sympathetic tale of Jewish life; *Easter Night*, a charming little story full of color, and three more recent sketches written in Korolenko's best style—*The Frost*, *The Royal Coachman*, and *The Last Ray*. After 1900, when Korolenko became one of the editors of *Russkoye Bogatstvo*, the

amount of his purely literary work decreased. As a publicist he wrote *The Year of Famine* (1893), prompted by the hard times then afflicting Russia; *Without a Language* (1895), giving his impressions of America; and *Present Customs* (1910), an eloquent plea in favor of the abolition of the liquor trade. His latest longer production is *A History of my Contemporary* (2 vols., 1911-12), an autobiographical work. His sixtieth anniversary was celebrated in 1913 with great enthusiasm throughout Russia.

Korolenko is a notable representative of the older traditions in Russian literature. His art, which has the classical simplicity of Turgenev, is a consummate blending of realism and romanticism, revealing a sympathetic and optimistic soul, and since Turgenev no writer has used better Russian. Korolenko's principal works have long been translated into English, French, and German. Consult J. Mackenzie, "A Contemporary Russian Writer," in *Gentleman's Magazine*, vol. cclxxxviii (London, 1900), and Sergyei Perski, *Contemporary Russian Novelists*, translated from the French by F. Eismann (Boston, 1913).

KÖRÖS, CSOMA DE. See CSOMA DE KÖROS.

KÖRÖS, KÉ'RESH, NAGY, and KIS. Two towns of Hungary.—NAGY, or GREAT KOROS, is a market town in the County of Pest, 56 miles by rail southeast of Budapest (Map: Hungary, F 3). It has steam mills and is in an agricultural, wine-growing, and stock-raising region. It is noted for its melons. There are a higher Gymnasium with a good library, a teachers' seminary, and important local archives. Pop., 1900, 26,638; 1910, 28,575, mostly of the Magyar Reformed faith.—KIS, or LITTLE KOROS, lies in a farming district, about 38 miles southwest of Nagy Körös. Pop., 1900, 9271; 1910, 11,562. It is the birthplace of Petöfi, the Hungarian poet.

KORRIGUM, kör'i-güm. See HARTBEEST.

KORSAKOFF, N. A. RIMSKY. See RIMSKY-KORSAKOFF, NICHOLAS ANDREYEVITCH.

KORSCHULT, kör'shült, EUGEN (1858-). A German zoologist, born at Zittau. He studied in Heidelberg, Leipzig, and Freiburg, where he obtained his degree in 1882. From 1882 to 1884 he was assistant in the Zoologisches Institut in Leipzig. In 1885 he was appointed privatdocent at Freiburg and in 1887 at Berlin; in 1892 he became professor of zoölogy and comparative anatomy in Marburg. His writings include: *Ueber die Entstehung und Bedeutung der vergleichenden Zellenelemente des Insectenovarums* (1886), *Lehrbuch der vergleichenden Entwicklungsgeschichte der urbellosen Thiere* (1890-93; trans. into Eng. as *Text-Book of the Embryology of Invertebrates*, 1895-1900), with K. Heider; *Ueber die Entwicklung von Dreisena polymorpha Pallas* (1891), *Beiträge zur Entwicklungsgeschichte der Kephelopoden* (1892). His later writings were largely in collaboration.

KÖRTE, kör'te, GUSTAV (1852-). A German archæologist, born in Berlin and educated at the universities of Göttingen, Munich, and Berlin. He traveled in Italy and Greece, became docent at Göttingen in 1880 and professor at Rostock in 1881, and in 1905 was appointed secretary of the German Archæological Institute at Rome. In 1907 he succeeded Dilthey at the University of Göttingen. Among his

important works on ancient art are: *Die antike Skulptur aus Boeotien* (1878); *Inlievi delle une etruske* (1890, 1896), continuing Brunn's work; *Etruskische Spiegel* (1884-97), with Klugmann, a continuation of Gerhard's work; a summary (1904) of excavations which he and his brother made at Gordium in 1900.

KÖRTING, kër'ting, GUSTAV (1845-1913). A German philologist, whose special branch is Romance and English. He was born in Dresden and taught there after four years of study at Leipzig (1863-67). He went to Munster in 1876 and in 1892 to Kiel as professor of Romance philology. In 1879 he became editor with Koschwitz of the *Zeitschrift für neufranzösische Sprache und Litteratur* and in the following year of *Französische Studien*. His more important works are: *Ueber die Quellen des Roman de Rou* (1867), *Diktys und Dares: Ein Beitrag zur Geschichte der Troja-Sage* (1874); *Petrarca's Leben und Werke* (1878); *Geschichte der Literatur Italiens* (1878-84); *Boccaccios Leben und Werke* (1880); *Die Anfänge der Renaissance-Litteratur in Italien* (1882), the very useful *Encyklopädie und Methodologie der romanischen Philologie* (1884-88) and *Laténisch-Romanisches Wörterbuch* (3d ed., 1907). *Grundriss der Geschichte der englischen Litteratur* (1887; 5th ed., 1910); *Formenlehre der französischen Sprache* (1893-98).—HEINRICH (1859-90), a brother of Gustav, like him was a Romance scholar. He was born in Leipzig, became privatdocent in 1885, and in 1889 professor in the University of Leipzig. He wrote: *Geschichte des französischen Romans im siebenzehnten Jahrhundert* (2d ed., 1891); *Neugriechisch und Romanisch* (1896), *Bemerkungen über den Begriff und die Teile des grammatischen Satzes* (1905); *Adolf Turols, Roman* (1906); *Etymologisches Wörterbuch der französischen Sprache* (1908), *Etymologisches Lehr- und Fremdwörterbuch der deutschen Sprache* (1910).

KORTUM, kör'tum, KARL ARNOLD (1745-1824). A German physician and author, born at Mülheim-on-the-Ruhr, Rhenish Prussia. He studied and practiced medicine at Duisburg and afterward at Bochum, and besides several medical works wrote *Verteidigung der Alchemie* (1789), also treatises on bee culture and antiquarian subjects. But he is chiefly remembered as the author of *Leben, Meinungen und Thaten von Hieronymus Jobs dem Kandidaten* (1784), a grotesque, comical epic, which subsequently went through many editions under the title *Die Jobsiade* (new ed. by Bierbaum, Leipzig, 1906). Consult Deicke, *Der Jobsiaden-dichter Karl Arnold Kortums* (Mülheim-on-the-Ruhr, 1893), and id., *Des Jobsiaden-dichters K. A. Kortum: Lebensgeschichte von ihm selbst erzählt* (Dortmund, 1910).

KORVEI, kör'vi. An ancient abbey of Germany. See CORVEI.

KORYAKS. See KORIAKS

KOS. See COS.

KOSCHAT, kó'shät, THOMAS (1845-1914). An Austrian composer, born at Viktring, near Klagenfurt. He entered the University of Vienna to study natural science, but his love for music caused him to abandon his scientific studies, and he became a member of the chorus at the Royal Opera. In 1874 he joined the cathedral choir and in 1878 the court chapel. The instantaneous success and immense popularity of his first quartets for male voices in Carin-

thian dialect, published in 1871, determined him to devote himself entirely to this field. Utmost simplicity of musical structure, coupled with genuine feeling, tender pathos, and a roguish humor, impart to these unpretentious compositions the true character of the folk song. Koschat always wrote both words and music. Consult K. Krobath, *Thomas Koschat, der Sanger Karntens* (Leipzig, 1912).

KOSCHWITZ, kôsh'vits, EDUARD (1851-). A Romance philologist, born at Breslau. In 1877 he became docent at Strassburg and afterward was made professor at Greifswald and Marburg. His specialty is French and Provençal. His works include: *Ueber die Chanson du Voyage de Charlemagne* (1875; new ed., 1907); an edition of that *Chanson* (1883); *Les plus Anciens Monuments de la Langue Française* (1879; 6th ed., 1907); *Commentar zu den ältesten französischen Sprachdenkmälern* (1886); *Neufranzösische Formenlehre nach ihrem Lautstande* (1888); *Les parlers Parisiens* (1898; 4th ed., 1911); *Zur Aussprache des Französischen* (1892); *Französische Novellistik- und Roman-litteratur über 1870-71* (1893); *Die provenzalischen Fehber und ihre Vorgänger* (1894); *Grammaire historique de la langue des Félibres* (1894); *Anleitung zum Studium der französischen Philologie* (1897, 3d ed., 1907); *Mirêio, poème provençal de F. Mistral* (1900); *Altfranzösisches Uebungsbuch* (1884, 4th ed., 1911), with Wendelin Förster. Koschwitz was editor of several philological periodicals.

KOSCIUSKO, kôs'i-ûs'kô. A city and the county seat of Attala Co., Miss., 75 miles northeast of Jackson, on the Illinois Central Railroad (Map: Mississippi, F 4). It contains the Central Mississippi College (Baptist), a school for negroes, and has cotton and oil mills, wood-working establishments, and ice plants. It was first incorporated in 1868. Pop., 1900, 2078, 1910, 2385.

KOSCIUSKO, kôs'i-ûs'kô, MOUNT. The highest elevation of the Australian Alps, being 7328 feet high and situated north of the boundary between New South Wales and Victoria and about 75 miles from the Pacific coast (Map New South Wales, E 5). In 1897 a meteorological station was established on its summit.

KOSCIUSZKO, kôs-choosh'kô, TADEUSZ (1746-1817). A Polish patriot. He was born Feb. 12, 1746, at Mereczowszczyzna, near Novogrudok, in Lithuania, being descended from an ancient but impoverished Lithuanian family. He received his military education at Warsaw and at the military academy of Versailles and became a captain in the Polish army. In 1776 he left his native country and embarked for America. Letters of recommendation from Benjamin Franklin obtained for him a colonel's commission, Oct. 18, 1776, and he was attached to General Gates's army operating in northern New York. The excellent strategic position taken by the American army at Bemis Heights, near Saratoga, was largely planned by Kosciuszko. He was engaged as chief engineer in constructing the fortifications at West Point and became adjutant to General Washington. In 1780-81 he served under General Greene in the South and after the conclusion of peace received the thanks of Congress with the brevet of brigadier general and became a member of the Society of the Cincinnati. He returned to Poland in 1786 and three years later was made major general in the Polish army. In the campaign of 1792, follow-

ing on the repudiation by Russia of the constitution of May 3, 1791, and the invasion of Poland, Kosciuszko, as lieutenant general under Prince Joseph Poniatowski, with 4000 Polish troops held at bay a Russian army of 18,000 men at Dubienka (July 17), inflicted a loss of 4000 men on the enemy, and effected his retreat with a total loss of 90. After the submission of King Stanislas, which was followed by the second partition of Poland, Kosciuszko took up his residence in Leipzig. When the Poles rose in arms against their foreign oppressors in 1794, he was made Dictator, and on April 4 with a force of 4000 peasants, mostly armed with scythes, he defeated an army of 6000 Russians, who were marching on Cracow, at Racławice. On April 17 the inhabitants of Warsaw rose and expelled the Russian troops. Kosciuszko instituted a provisional government, but, discouraged by the prevailing anarchy, he soon laid down the dictatorship. He marched against the Russians, but had to encounter a powerful enemy in the Prussians, who advanced to the aid of the Russians. He was defeated at Szczekoczyn, June 6, 1794, and retreated to Warsaw, which he defended successfully against the besieging forces of the enemy. In this hour of trial Kosciuszko was proof against the most tempting proposals on the part of the Prussian King. In the fall he took the field once more with an army of 20,000 regular troops and some 40,000 ill-armed peasants. On October 10 the Poles were decisively defeated at Maciejowice by an allied army of thrice their strength, and Kosciuszko, covered with wounds, fell into the hands of the enemy. He was kept a prisoner till after the accession of the Emperor Paul, who restored him to liberty in 1796, gave him an estate with 1500 peasants, and handed to him his sword, which Kosciuszko declined to receive, saying, "I have no more need of a sword, as I have no longer a country." He afterward gave up the estate and sent back from London the money which he had received from the Emperor. Upon the occasion of a visit to the United States in 1797 he received a pension and a grant of land, but returned to Europe after the passage of the Alien Act by Congress. When Napoleon, in 1806, formed a plan for the restoration of Poland, Kosciuszko felt himself restrained from taking an active part in it by his promise to the Emperor Paul. The address to the Poles published in his name in the *Moniteur* was a fabrication. In 1814 he wrote to the Emperor Alexander entreating him to grant an amnesty to the Poles in foreign countries and to make himself constitutional King of Poland. He released from servitude, in 1817, the peasants on his own estate in Poland. His death took place Oct. 15, 1817, at Solothurn, Switzerland, as a result of a fall from his horse. His remains were removed to Cracow by the Emperor Alexander and were laid by the side of those of John Sobieski. A cairn built up of small stones brought together by his admirers stands upon a hill in the suburbs of Cracow, which commands a wide view of the city, the Vistula, and the distant mountains. Kosciuszko was a convinced democrat and believed in absolute equality before the law, but the aristocratic prejudices of his country compelled him to resort to half measures. He wrote the *Manœuvres of Horse Artillery* (New York, 1808) and a description of the campaign of 1792 (vol. xvi of E. Raczyński's *Sketch of the Poles and Poland*, Posen, 1843).

Bibliography. A biography, with collection of documents relating to Kosciuszko's career, was published by Kornon at Cracow in 1894. Consult also: Rychlicki, *Kosciuszko and the Partition of Poland* (Cracow, 1872); A. W. W. Evans, *Memoir of Thaddeus Kosciuszko, Poland's Hero and Patriot* (Cincinnati, 1883); M. I. J. Griffin, "General Thaddeus Kosciuszko, Father of American Artillery Service of the United States," in *American Catholic Historical Researches*, vol. vi (N. S., Philadelphia, 1910). There are biographies in German by Falkenstein (Leipzig, 1834), in French by Chodzko (Paris, 1837), in Polish by Paszkowski (Cracow, 1872); also a brief monograph by Arnold, *Tadeusz Kosciuszko in der deutschen Litteratur* (Berlin, 1898).

KOSEGARTEN, kō'ze-gär'ten, JOHANN GOTTFRIED LUDWIG (1792-1860). A German Orientalist, philologist, and historian, born at Altenkirchen, island of Rügen, the son of Kosegarten the poet. He studied theology and philosophy at Greifswald, where he became adjunct professor in both these branches after two years in Paris (1812-14) devoted to the study of Oriental languages. He was called to Jena in 1817 and recalled to Greifswald in 1824. On Arabic language and literature he published: *De Mokammede ibn Batuta ejusque Itineribus* (1818); the *Moallaka* of Amr ibn Kolthum (1819); the *Chrestomathia Arabica* (1828) and the editions, unfortunately not completed, of the *Annals of Tabari*, with a Latin translation (1831-37), of the collection of lyrics *Kitāb al-aghāni*, vol. i (1840-46), and of *The Hudsaian Poems*, vol. i (1854). Besides these he produced a German translation of the *Nala* episode in the Sanskrit epic of the Mahabharata (1820), edited the collection of fables *Pantschatantra* (1848-59), and in collaboration with Iken issued a German version of the Persian collection of fairy tales *Tuti nameh* (1822). He edited Kantzow's old chronicle *Pomerania* (1816-17), followed by *Pommersche und rugische Geschichtsdenkmäler*, vol. i (1834), and *Codex Pomeranæ Diplomaticus*, vol. i (1843-62), with Hasselbach. He also wrote a *Geschichte der Universtat Greifswald* (1856), but the completion of his *Wörterbuch der niederdeutschen Sprache* (vol. i, 1856-60) was prevented by his death.

KOSEGARTEN, (GOTTHART) LUDWIG THEOBUL (1758-1818). A German poet. He was born at Grevesmühlen, and studied theology at Greifswald, where he was called to Greifswald as professor of history, which chair he exchanged for that of theology in 1816 and at the same time became pastor in that city. He was most successful in the idyllic epics *Die Inselfahrt* (1805) and *Jucundo* (1808; 7th ed., 1855), an imitation of Voss's *Luise*. Although popular at the time, his poems seem now rather empty and bombastic. Consult his *Das fünfzigste Jahr meines Lebens* (1815) and his biography by Franck (Halle, 1887).

KOSEL, kō'zel. A city of Prussia. See COSEL.

KOSER, kō'zēr, REINHOLD (1852-1914). A German historian, born at Schmarsow in Prussia. He was educated at Berlin, Vienna, and Halle. In 1882 he was appointed keeper of the Berlin archives and in 1884 professor of history. In 1890 he went to Bonn in the same capacity, in 1896 was chosen head of the Prussian archives, and two years later was appointed Prussian historiographer. Frederick the Great was

Koser's especial study. He wrote: *Friedrich der Grosse als Kronprinz* (1886; 3d ed., 1901), *König Friedrich der Grosse*, vol. i (1890-93, coming down to 1756); *Politische Korrespondenz Friedrichs des Grossen* (1879-83); *Unterhaltungen Friedrichs des Grossen mit H. de Catt* (1884). *Briefwechsel Friedrichs des Grossen mit Mittheilungen der preussischen Archivverwaltung* (1900-04).

KOSEREFSKY, kō'sē-rēf'skī. See HOLY CROSS MISSION.

KOSHER, kō'shēr, or **KASHER**, kā'shēr. A Hebrew word, used rarely in the Bible, meaning "fitting, proper" (as in Esther viii. 5). At present it is used especially of food proper to be eaten by Jews. Stores and eating houses furnishing such food often display the Hebrew word כָּשֵׁר, *kosher*. The term is applied especially to meat. Not only must the forbidden animals of the Law (Deut. xiv; Lev. xi) be avoided, but the flesh must be from animals killed according to the traditional rabbinical ritual and, before it is eaten, must be soaked, salted, and washed, in order to remove any possible traces of blood. Another restriction of kosher food is that milk or any of its products must not be used with flesh, so that meat cannot be cooked in butter. This rule arose by inference from the command "not to seethe a kid in its mother's milk" (Deut. xiv. 21). These and other laws make it impossible for a strict Jew to procure kosher food except in a Jewish place. Liberal Jews, however, regard these laws as belonging to the temporary rather than to the permanent elements of the Jewish religion.

KOSKIMO, kōs'ké-mō. See KWAKIUTL.

KÖSLIN, kēs-lēn, or **CÖSLIN**. A town in the Province of Pomerania, Prussia, on the Mühlenbach, 8 miles from the Baltic (Map: Germany, G 1). It has numerous churches, a cadet school, a teachers' seminary, and an agricultural school, several iron foundries and manufactures of paper, silk, machinery, soap, railway signals, and lumber. Köslin dates from 1188 and became a town in 1266. Pop., 1900, 20,418, 1910, 23,236.

KOSLOV, kōz-lōf'. A district town of the Government of Tambov, Russia, 45 miles northwest of the town of Tambov and about 250 miles southeast of Moscow (Map: Russia, F 4). It lies at the junction of two important railway lines and is a centre in the grain and live-stock trade, the district being celebrated for its breed of horses. The manufactured products are machinery, tobacco, leather, tallow, beer, and spirits. In the vicinity is situated the Troitzky Monastery. Pop., 1912, 50,225. Koslov was founded in 1627.

KOSSEL, ALBRECHT (1853-) A German physiologist. He was born in Rostock; studied medicine there and at Strassburg, where he became (1877) assistant to Hoppe-Seyler and (in 1881) privatdocent; went to Berlin in 1883 as director (succeeding Baumann) of the chemical department in the Physiological Institute; and became professor of physiology at Marburg in 1895 and at Heidelberg in 1901. For his researches in biochemistry, especially in the *Zeitschrift für physiologische Chemie*, which he edited, he received the Nobel prize in medicine in 1910. His studies were particularly devoted to the chemical composition of cells, of nuclei, and of albumens; and he discovered the bases adenine and thymine of the nucleic acids. Kossel received honorary degrees from Cambridge, Dub-

lin, Ghent, Greifswald, Geneva, and St. Andrews, became Privy Councillor in 1907, and was prorector in 1908-09. He wrote *Gevebe des menschlichen Körpers und ihre mikroskopischen Untersuchung* (1889-91), with Behrens and Schiefferdecker, and an introduction to medical chemistry (6th ed., 1911).

KOSSINNA, kôs'i-nâ, GUSTAF (1858-). A German archaeologist, born in Tilsit. He was educated at Göttingen, Leipzig, Berlin, and Strassburg, and was in the university library service of Halle and of Berlin (1886), becoming custodian of the Bonn Library in 1887 and going in 1892 to the Royal Library in Berlin, of which he became librarian in 1894. In 1902 he was appointed professor of German archaeology in the University of Berlin. He founded the German Society for Prehistoric Research (*Gesellschaft für Vorgeschichte*) and was its first president (1909). He attempted to prove by arguments from the shape and decoration of early pottery that the original home of the Indogermanic family was in northwestern Germany. He contributed to archaeological and ethnological periodicals and himself edited *Manus*, *Zeitschrift für Vorgeschichte*. Among his books are: *Die Sueben* (1890); *Die vorge-schichtliche Ausbreitung der Germanen in Deutschland* (1896); *Der Ursprung des Germanennamens* (1895); *Die indogermanische Frage archaologisch beantwortet* (1902); *Zur Archäologie der Ostgermanen* (1905); *Der Ursprung der Urfinnen und der Indogermanen* (1909-11).

KOSSO. See Koosso.

KOSSOVO. An elevated plain in European Turkey in the Vilayet of Kossovo (Turkish Servia), drained by the Sitnitsa, a tributary of the Marava. Here, on June 15, 1389, a battle was fought between the Servians and the Turks under Amurath or Murad I, in which the latter were completely victorious, but the Sultan was killed after the battle (according to the common account) by a wounded Servian. In October, 1448, János Hunyady was completely defeated here by the Turks.

KOSSUTH, kôsh'út, FERENCZ (FRANCIS) (1841-1914). An Hungarian political leader, son of Louis Kossuth. He was born Nov. 16, 1841, at Budapest. In his childhood he shared the romantic career of his father, being captured by the Austrians at the age of eight and kept a prisoner in the fortress of Pressburg. When liberated a few years later, he went to live with his father in Kutahia in Asia Minor and then in England, also traveling with him in the United States. He was educated at Paris and London and, after working as engineer for two years in England, went in 1861 to Italy, where he engaged in the practice of his profession till the death of his father in 1894. Returning to Hungary, he was elected to the House of Deputies in 1895 and became the leader of the Independent party, whose programme called for radical concessions to the Magyar nationality. He was one of the leaders of a coalition which in the elections of January, 1905, overthrew the Liberal party after it had long been entrenched in power. There followed more than a year of confusion, Kossuth refusing to form a government unless the demands of the coalition were granted by the Emperor-King. (See HUNGARY) A compromise was finally arranged, and Kossuth became Minister of Commerce in the Wékérle cabinet in April, 1906. In his great desire to establish

Hungarian nationality even more firmly than it is now, Kossuth favored in 1909 the establishment of a separate Hungarian bank. The proposition was vetoed by Emperor Francis Joseph. When Kossuth attempted to modify his programme to suit the interests of Austria, his party refused to follow him and split into two factions.

KOSSUTH, LAJOS (LOUIS) (1802-94). The leader of the Hungarian revolution of 1848-49. He was born April 27, 1802, at Monok in the County of Zemplin in Hungary. His family was of Slavic origin and of noble rank; his father was a lawyer. He studied law at the Protestant college of Sárospatak and at Pest, practiced first in his native county, and in 1831 established himself in Pest. In 1832 he began his political career in the Upper House of the Diet as a proxy of a magnate and edited a Liberal paper, which, owing to the state of the laws, was not printed, but copied by hand and circulated. The subsequent publication of a lithographed paper led, in May, 1837, to Kossuth's imprisonment. He was liberated in 1840 and until 1844 was the editor of the *Pesti Hírlap*, in which he advocated views too extreme for any of the Liberal party among the nobles, but which took strong hold of the people in general, especially of the youth of the country. In November, 1847, he was sent as a deputy from Pest to the Lower House of the Diet and soon distinguished himself as an orator and became the leader of the opposition. He advocated the emancipation of the peasants, the abolition of feudal privileges, the elevation of the citizen class, and the freedom of the press. When Metternich was driven from power in March, 1848, Kossuth openly demanded a separate ministry for Hungary and in the same month became Minister of Finance in the cabinet of Count Louis Batthyányi. In the great patriotic movement of which he was the soul and head, Kossuth by his devotion to the cause of the Magyars aroused the enmity of the other nationalities within Hungary and thus precipitated a conflict with the Slavic peoples of the south, which gave Austria the means of combating the new order of things in Hungary. (See AUSTRIA-HUNGARY; JELLACHICH.) On the dissolution of the ministry in September, 1848, he found himself at the head of the Committee of National Defense, with dictatorial powers, and prosecuted with extraordinary energy the measures necessary for carrying on the war both against Austria and against the invasion of the Ban of Croatia. After advancing almost to the gates of Vienna, the Hungarians were defeated at Schwechat, Oct. 30, 1848. Soon after the Austrian forces invaded Hungary and in January, 1849, entered Pest. The first reverses of the Hungarians were followed by a series of brilliant victories in the spring, which were due in no small measure to Kossuth's restless activity in organizing the national forces for the field. To put an end to all the hopes and schemes of the Moderate party he induced the Diet at Debreczin, April 14, 1849, to declare that the Hapsburg dynasty had forfeited the throne and to proclaim the independence of Hungary. The Hungarian Republic was established with Kossuth as Governor. Kossuth was disappointed in his hopes of intervention on the part of the Western Powers and had to face the overwhelming power of Russia, which Czar Nicholas brought to the support of the Hapsburgs. Finding the dissensions between himself

and Görgey (q.v.) damaging to the national cause, he resigned his dictatorship in favor of the latter Aug. 11, 1849, two days after the defeat at Temesvár. On August 13 Görgey surrendered the Hungarian army to the Russians, and on the seventeenth Kossuth fled into Turkey, where he was kept under restraint by the Turkish government; but though his extradition was demanded both by Austria and Russia, the Porte, supported by England and France, resisted all their demands. In September, 1851, at the intervention of England and the United States, he was liberated and sailed in the United States frigate *Mississippi*, sent for the purpose by the government, to Gibraltar, after having been refused permission to land at Marseilles by the Prince-President Napoleon, whence he sailed to England, where he was received with every demonstration of public respect and sympathy. In December of the same year he landed in the United States. His stay in America was a continuous ovation. His wonderful oratory kindled the enthusiasm of the people, already in sympathy with the cause he represented; but his unwise efforts to draw the United States into a quarrel with Austria cooled the ardor with which he had been greeted at first. He returned in July, 1852, to England, and there he chiefly resided until 1862, when he went to Turin, which he made his permanent home. In the stirring years of 1859 and 1866 Kossuth endeavored to take advantage of the opportunity to bring about new Hungarian risings, but his plans failed. He organized, however, an Hungarian legion, which fought under Garibaldi in 1859 and 1866. When Austria and Hungary became reconciled in 1867, Kossuth refused to accept a seat in the Diet after he had been elected, in order to give public expression to his intransigent attitude, and being deprived of his Hungarian citizenship on a pretext, he continued in his uncompromising hostility to the Hapsburgs to the end. He died at Turin, March 20, 1894. His body was interred at Budapest, April 1, amid a great demonstration of respect and affection.

Bibliography. W. H. Stiles, *Austria in 1848-1849* (New York, 1852); E. O. S., *Hungary and its Revolution, with a Memoir of Ludwig Kossuth* (London, 1854; new ed., ib., 1896); Lajos Kossuth, *Memoirs of my Exile* (ib., 1880, new ed., New York, 1894); Pulszky, *Meine Zeit, mein Leben* (Pressburg, 1880-83), by an intimate associate of Kossuth; W. R. Thayer, "Kossuth," in *Throne Makers* (New York, 1899); James Creelman, *On the Great Highway, the Wanderings of a Special Correspondent* (Boston, 1901); Eugene Pivány, *Sixty Years Ago: An Address Delivered on the Sixtieth Anniversary of Louis Kossuth's Arrival in the United States* (Philadelphia, 1911); also a mass of reports, speeches, and controversial articles occasioned by Kossuth's visit to England and the United States.

KOST, FREDERICK W. (1861-). An American landscape and marine painter, born in New York City. He studied under William Macy at the National Academy of Design, then in Munich and Paris, received medals at the Buffalo (1901) and St. Louis (1904) expositions, and was elected a member of the National Academy in 1906. His "Frosty Morning" is in the Metropolitan Museum, New York; "On the St. John River, N. B.," in the Pennsylvania Academy, Philadelphia; "Smithfield Marshes,

Staten Island," in the Museum of the Brooklyn Institute. His work is excellent in technique and delicate in tone.

KOSTENDIL, kës'ten-dil', or KIUSTEN-DIL, kyus'ten-dil'. A town of Bulgaria, situated in the western part of the country, 43 miles southwest of Sofia, and on the railway line from Kumanova to Sofia (Map: Balkan Peninsula, D 3). It has a high school, barracks, and hot springs. Pop., 1900, 12,042; 1910, 13,748.

KÖSTER, kës'tër, HANS (1818-1900). A German dramatist and poet, born at Kritzw. After studying philosophy at Berlin, Bonn, and Munich, he traveled in Italy and France and lived successively in Berlin, Weimar, and near Neuzelle, Brandenburg. As a member of the North German, and afterward of the first German Reichstag, he manifested the Prussian party spirit, which is also apparent in his political pamphlets and his poetic productions. His early dramas, although favorably commented upon, did not find their way to the stage, but *Ulrich von Hutten* (1846), *Hermann der Cherusker* (1861), and *Der Grosse Kurfürst* (1851; new version, 1865) were repeatedly performed. He also published the stories *Liebe und Leiden* (1862) and *Erlebnisse und Gestaltungen* (1872); two collections of patriotic songs, *König Wilhelm und sein Heer* (1868) and *Kaiser und Reich* (1872), the biblical epics *Hiob* and *Die Bergpredigt* (1885); *Gedichte* (1897); *Ruinen und Scherben* (1900).

KOSTER, LAURENS JANSZON. See **COSTER.**

KOSTER, or COSTER, SAMUEL (1579-1662). A Dutch dramatist. He was born at Amsterdam and studied at Leyden. His excellent plays and his establishment of the Nederduitsche Academie (1617; called, after him, Coster's Academy), a society which gave great encouragement to the earlier dramatic authors of Holland, earned for him the title of "founder of the theatres of Amsterdam." His comedies include *Spel van de rijke man* (1615) and *Boereklucht van Teeuwis de Boer en meijer van Grevelinghuyzen* (1612). His tragedies include *Isabella* (1617), *Itys* (1615), *Iphigenia* (1617), and *Polixena* (1619). Consult the monograph on Koster by Rossing (Leyden, 1875).

KÖSTLIN, kës'tlën, CHRISTIAN REINHOLD (1813-56). A German poet and criminal jurist, born at Tübingen, where he established himself as privatdocent in 1839, after having studied law there and in Heidelberg and Berlin. He acquired his reputation as a writer on criminal law with *Die Lehre vom Mord und Totschlag* (1838). His later publications include: *Der Wendepunkt des deutschen Strafrechts im neunzehnten Jahrhundert* (1849); *Die Geschworenengerichte* (1851); *Geschichte des deutschen Strafrechts* (1859). Under the pseudonym C. Reinhold he wrote poems and stories, which appeared collected in 1847-48 and 1853.—His wife, **JOSEPHINE LONG** (1815-80), was a well-known composer of songs.

KÖSTLIN, JULIUS (1826-1902). A German Protestant theologian born in Stuttgart, where he became vicar in 1850, after having traveled through England and Scotland. Subsequently he was professor of theology at the universities of Göttingen (from 1855), Breslau (1860), and Halle (1870). He retired in 1896. A partial list of his writings includes: *Luthers Lehre von der Kirche* (2d ed., 1868); *Das Wesen der Kirche, etc.* (2d ed., 1872); *Martin Luther, sein*

Leben und seine Schriften (5th ed., 1903); also a popular life of the reformer, *Luthers Leben* (9th ed., 1891); *Der Glaube und seine Bedeutung für Erkenntnis, Leben und Kirche* (1895); and *Christliche Ethik* (1898). After 1873 he edited *Theologische Studien und Kritiken*. Consult his autobiography (Danzig, 1891).

KÖSTLIN, KARL REINHOLD (1819-94). A German theologian and writer on aesthetics, born at Urach, Württemberg. He studied in Tübingen and Berlin, settled in the former city as Privatdocent of philosophy and theology, and was appointed professor of aesthetics and art history in 1857. In this connection he published: *Goethes Faust, seine Kritiker und Ausleger* (1860); *Hegel in philosophischer, politischer und nationaler Beziehung* (1870), *Asthetik* (1863-69), his principal work, combining subtle judgment with lucid exposition; *Richard Wagners Tondrama: Der Ring des Nibelungen* (1877); *Ueber den Schönheitsbegriff* (1879); *Geschichte der Ethik bis Plato* (1887). His theological writings include *Der Ursprung und die Komposition der synoptischen Evangelien* (1853).

KOSTOMAROV, k'ostō-mā'rōf, NIKOLAI IVANOVITCH (1817-85). A famous Russian historian and author, born in the Government of Voronezh. He studied in the universities of Kharkov and Moscow, and after having served in a regiment of dragons was appointed (1846) instructor in history in Kiev. Here he founded the Slavophile Society of Saints Cyril and Methodius and a secret society to revive Little Russian literature. He was deprived of his professorship in 1847 and banished to Saratov, whence he was allowed to go abroad only after the death of Nicholas I. In 1859-62 he held a professorship of history in St. Petersburg, where his lectures attracted throngs of listeners. Kostomarov dropped his professorship, however, to devote himself entirely to historical and literary pursuits. He introduced into Russia the method of treating history as the life of the people and not the growth of the state, while his *North-Russian Commonwealths* (1863) was epoch-making in proving the antiquity of republican institutions in Russia. In accordance with his theory, Kostomarov preceded every historical investigation by an intense absorption in the literature, songs, and folklore of the period he treated, thus rendering incalculable service to Russian historiography. His historical novels, however, of which he wrote several, are in striking discord with his views of history as a science. These abound in anachronisms, and most momentous historical events are often laid to the whims of personages unknown to history. His most important works are *Historical Monographs* (12 vols., 1868) and *Russian History in Biographies of her Chief Men* (1875-76; in 3 vols., 1911), the first volume in German translation by Henckel (Leipzig, 1886).

KOSTROMA, kō'stro-ma'. A government of central Russia, north of the governments of Vladimir and Nizhni Novgorod, with an area of 32,432 square miles (Map: Russia, F 3). The surface is generally level, with a few hills along the courses of the rivers; about 60 per cent of the total area is under forests. The climate is severe, the average annual temperature being about 40° F. The region is watered by the Volga and its tributaries. Agriculture, although the chief occupation, is in a low stage of development, the product being insufficient for

domestic demands. Hemp is cultivated on a large scale, and horses of a high grade are raised. There are manufactures of cotton goods, pottery, linen, wooden, and small metal articles; they are produced mainly in the rural districts as adjuncts to agriculture. The trade is chiefly in forest products and manufactures. The migration of artisans from Kostroma to the industrial centres of the Empire is very considerable. Pop., 1912, 1,745,800, composed principally of Great Russians. Capital, Kostroma (qv).

KOSTROMA. Capital of the government of that name, in European Russia, situated near the junction of the river Kostroma with the Volga, 500 miles from St. Petersburg (Map: Russia, F 3). The most notable building is the cathedral of the Assumption (1272). The monastery of Ipatiev, built in 1330, is intimately associated with Czar Michael Feodorovitch, who was elected and crowned here in 1613. In the centre of the town is a monument to Ivan Susanin, the peasant who saved Michael from the Poles. The cathedral of the Trinity (1586), within the monastery, contains a number of ancient and reputed miraculous pictures also associated with the history of Michael. The educational institutions include a Gymnasium, a high school, a seminary, a technical school, and a theatre. It has considerable manufactures, chiefly of linen, and there is trade in corn, leather, flax, and provisions. Pop., 1912, 67,274. Kostroma was probably founded in 1152 and is therefore one of the oldest of Russian cities.

KÖSZEG, kē'ség. A city of Hungary. See GÜNS.

KOSZTA (k'ostā) AFFAIR. In American history, the name applied to a diplomatic episode, involving the rights in foreign countries of emigrants to the United States as yet not fully naturalized. A certain Martin Koszta, of Hungarian birth, who had taken part in the political movement of 1848-49 for detaching Hungary from the dominion of the Emperor of Austria, and who had fled to Turkey upon the failure of that movement, emigrated to the United States after a short detention in Turkey, and in July, 1852, made a declaration under oath of his intention to become a citizen of the United States, at the same time renouncing all allegiance to any foreign power. After a residence of a year and 11 months he returned to Smyrna, Turkey, on private business of a temporary nature and placed himself under the protection of the American Consul at Smyrna and the American chargé d'affaires ad interim at Constantinople. While waiting to return to the United States, he was taken by force aboard the Austrian brig of war *Huszar* and confined there in chains. The American officials protested in vain both to the Turkish government and to the Austrian officers, and finally on July 2, 1853, Captain Ingraham of the United States sloop of war *St. Louis*, then lying in Smyrna harbor, threatened to open fire if Koszta was not surrendered to him by four o'clock. The Austrian Consul General then agreed that Koszta should be held by the French Consul General until some agreement was reached. On Aug. 29, 1853, Baron Hülsemann, the Austrian chargé d'affaires at Washington, wrote to Secretary of State Marcy, asking that the United States "disavow the conduct of its agents, . . . hasten to call them to a severe account, and tender to Austria

a satisfaction proportionate to the magnitude of the outrage," basing his request on the ground that Koszta had never ceased to be a citizen of Austria, and that Ingraham's threat was in violation of international law. Marcy replied, Sept. 26, 1853, in a ringing letter, known as the Hülsemann letter, in which he defended the position of the United States throughout, on the ground that Koszta had ceased to be a citizen of Austria even by the law of Austria, "that Koszta when seized and imprisoned was invested with the nationality of the United States, and they had therefore the right, if they chose to exercise it, to extend their protection to him, that from international law—the only law which can be rightfully appealed to for rules in this case—Austria could derive no authority to obstruct or interfere with the United States in the exercise of this right, in effecting the liberation of Koszta; and that Captain Ingraham's interposition for his release was, under the extraordinary circumstances of the case, right and proper." This letter, which was written by Marcy with an eye on the next Democratic nomination for President, was received with great enthusiasm throughout the United States, and the stand taken by Marcy with reference to the status of immigrants not fully naturalized has been indorsed by various well-known authorities on international law. Koszta was ultimately released and allowed to return to the United States. Congress showed its approval by a joint resolution thanking Captain Ingraham and conferring on him a medal. Consult *Correspondence between the Secretary of State and the Chargé d'Affaires of Austria Relative to the Case of Martin Koszta* (Washington, 1853). A bibliography of the affair may be found in J. F. Rhodes, *History of the United States from the Compromise of 1850*, vol. i (New York, 1910).

KOTAH, kō'tā. A native Rajputana state, India, with a capital of the same name, situated 120 miles south of Jaipur (Map: India, C 4). The town, on the right bank of the Chumbul, is fortified by a rampart and a ditch. It has manufactures of muslin, table ornaments, and paper. Pop., 1901, 33,657; 1911, 32,753. Near by is the Maharao's new palace with its public library. The state contains 5684 square miles. Pop., 1901, 544,879; 1911, 639,089.

KÖTHEN, kē'ten. A town of Germany. See COTHEN.

KOTLIAREVSKY, kōt'lyä-rēf'skī, IVAN PETROVITCH (1769–1838). A Ukrainian (Little Russian) poet, born and educated at Poltava. He served in the army (1796–1808), was prominent in the charities of his native city, conducted for several years a school for children of the impoverished nobility, and during his last years directed the poorhouse of Poltava. He wrote in the dialect of Little Russia a travesty on the *Aeneid* (1798), which has much satiric power and which very faithfully pictures the life of the peasants of the Ukraine. Among his plays, which also depict Ukrainian manners and customs and which laid the foundation for a national theatre in the Ukraine, *Natalka Poltavka* (1819), which has been turned into a successful opera, and *Moskal' čarivnik* (1841) are the best known. His complete works were published at St. Petersburg in 1862 (2d ed., 1875).

KOTO (Japanese). The Japanese harp, made in the form of a zither and consisting of 13 silk strings stretched over an oblong sounding board.

Each string has a separate bridge, by adjusting which the string is tuned. The koto is played with both hands and has a range of two and a half octaves. See JAPANESE MUSIC.

KOTOTSHIKHIN, kō'tō-shē'kēn, GRIGORIY (1630–67). A Russian writer, civil servant in the Office of Foreign Affairs under Czar Alexis and thus a contemporary of Krizhanitch (q.v.). At the age of 31 his conscience proved too tender for his tasks, and he had to seek an asylum first in Poland and then in Sweden, where he wrote a book about Muscovy (1666–67). Justly or unjustly he was executed for a murder in Stockholm and would have been unknown to posterity were it not for his manuscript giving faithful but most unflattering details of the life and reign of the Czar. In 1837 this book was found in the Upsala Library. It was published in Russia by the Imperial Archaeological Commission and called *O Rossi v Isarstvovame Aleksiya Mikhailovitch* (1859, last ed., 1884).

KOTOW, kō-tou' (Chin. k'ow-t'ow, k'ou-t'ou, from k'ow, to knock, and t'ou, head). To salute, pay respect, homage, or worship by kneeling ceremoniously and then knocking the forehead on the ground. In China schoolboys on entering the schoolroom kneel and knock their heads on the floor before the picture of Confucius; inferiors kotow to superiors; a humble apology is made by kotowing; prisoners kotow before the magistrate; and the kotow is the most respectful way of worshipping the gods, or before the ancestral tablets. The kotow is performed to friends and relatives seen for the first time after the death of one's father and mother, and it was imperative in approaching the Emperor. There were nine steps to the Imperial throne, and thus eight gradations of obeisance, before reaching the top, as follows: (1) joining the hands and raising them before the breast; (2) bowing low with the hands still joined; (3) bending the knee as if about to kneel; (4) actual kneeling; (5) the kotow, in which the suppliant or guest before the Emperor knelt and struck his head on the ground; (6) kneeling and striking the head on the ground thrice, called the *san k'ow*, or three knockings; (7) kneeling knocking the head thrice upon the ground, standing upright, and again kneeling and knocking the head three times more; (8) kneeling thrice and knocking the head to the earth nine times. While some of the gods receive only the kotow, or three knocks, and others the seventh grade of obeisance, the Emperor, with "Heaven," always received full quota of honor, which reaches its climax in the three kneelings and nine knockings of the head. Under the old system of Chinese etiquette and learning, to reject these forms was to reject authority, while to accept them was to acknowledge homage and obedience to the Emperor. No accredited European envoys have made the kotow, as that would have signified their country as inferior to China, except papal emissaries and those from Portugal and Holland, who originally yielded to Chinese etiquette, not understanding the full significance of the act, or for the sake of greater facilities of trade and for direct conference with the Emperor himself.

KOTBUS, kōt'būs. A town of Prussia. See COTTBUS.

KOTZEBUE, kō'tse-būō, ALEXANDER VON (1815–89). A German painter, born at Königsberg, son of August von Kotzebue. Educated in the Corps of Cadets at St. Petersburg, he gave

up the military career in 1838 to take up painting at the Academy, under Sauerweid, and continued his studies there for six years. From 1846 to 1848 he was in Paris, the pupil of Horace Vernet, then traveled in the Netherlands, Italy, and Germany, and in 1860 settled in Munich. His principal works are a long series of battle pieces ordered by the Czar for the winter palace in St. Petersburg. They comprise the principal combats between Peter the Great and Charles XII, notably "The Battle of Poltava," the battles during the Seven Years' War, in which the Russians were victorious, those in the campaign of Suvarov in Italy and Switzerland, and the battles of 1812 and 1813 against Napoleon. His pictures are deft in composition and show skill in the arrangement of scenic accessories, but they are essentially stage scenes, untrue to nature.

KOTZEBUE, AUGUST FRIEDRICH FERDINAND VON (1761-1819). A German dramatist and Russian civil servant, born at Weimar. Kotzebue studied law at Jena (1777) and Duisburg (1778), but was drawn to the stage and organized an amateur theatre at Duisburg. In 1780 he opened a law office at Weimar, but he was induced in 1781 to go to Russia, where he served successively as secretary to the Governor-General at St. Petersburg, assessor of the Upper Court of Appeals, and president of the Magistrates Board of the Province of Esthonia. He married a lady of rank and was ennobled. At his wife's death he resigned the Russian service, visited Paris, and from 1795 to 1798 lived chiefly at Friedenthal, his country seat, near Reval. He had already become known by a series of tales and several sentimental dramas. His first collected works, *Die jüngsten Kinder meiner Laune* (5 vols., Leipzig, 1793-97), belong to this period. In 1798 Kotzebue was summoned to Vienna as court dramatist, but friction arose, and he was permitted to resign in 1800 with a pension. He intended to return to Russia, but on the frontier he was arrested as a spy and sent to Siberia. Czar Paul, pleased at hearing a translation of Kotzebue's little drama *Der alte Lebküchler Peters des Grossen*, recalled him from exile, gave him office and an estate, and made him manager of the German theatre at St. Petersburg. Kotzebue tells all this vivaciously in *Das merkwürdigste Jahr meines Lebens* (2 vols., Berlin, 1801). After Czar Paul's death Kotzebue returned to Germany, lived successively in Weimar, Jena, and Berlin (1803), where he was made a member of the Academy of Sciences and shared in the editorship of *Der Freimütige*, a literary journal. In 1806 he went to Königsberg to make historical researches in the Prussian archives, as a result of which he published *Preussens altere Geschichte* (4 vols., Königsberg, 1809). His stay in Königsberg was short. The Napoleonic invasion obliged him to flee to Russia (1806), whence he kept up a lively journalistic warfare on Napoleon and his policy in *Die Biene* (1808-10) and *Die Grille* (1811-12). During these years he resided on his estate in Esthonia. He returned to Berlin as a Russian State Councilor in 1813 and was made Russian Consul General at Königsberg, whence he was recalled in 1816 as counsel to the Foreign Office at St. Petersburg. In 1817 he was sent as a salaried political spy to Germany, where he founded in the reactionary interest a journal, *Das litterarische Wochenblatt*. In this he attacked especially the German liberal stu-

dent *Burschenschaften* and thus excited a student, Karl Ludwig Sand, to assassinate him at Mannheim, March 23, 1819. Kotzebue as a dramatist was remarkably prolific and successful, and a master of stage effects, but he was superficial and neglectful of literary standards. His plays drew better houses than the classics. Of some 216 recorded plays 98 are printed (28 vols., 1797-1823; 44 vols., 1827-29; 10 vols., 1868). The best known of them in England and America are *The Stranger* (*Menschenhass und Reue*) and *Pizarro* (*Die Spanier in Peru*), noteworthy also are *Die beiden Klingsberg*, *Die Indianer in England*, and *Die deutschen Kleinstädter*. Kotzebue wrote also some weak novels. In addition to the autobiographical work mentioned above, consult Döring, *August von Kotzebue's Leben* (Weimar, 1830); W. von Kotzebue, *August von Kotzebue, Urtheile der Zeitgenossen und der Gegenwart* (Dresden, 1884); J. Minor, *Ueber Kotzebue* (Vienna, 1894); E. Jäckh, *Studien zu Kotzebues Lustspieltechnik* (Heidelberg, 1899). Charles Rabany, *Kotzebue, sa vie, son temps, et ses œuvres* (Paris, 1903); Gerhard Stenger, *Goethe und August von Kotzebue* (Breslau, 1910).

KOTZEBUE, OTTO VON (1787-1846). A Russian navigator, son of August von Kotzebue, born at Reval. He made three voyages round the world, sailing first under Krusenstern to Japan (1803-06). On his second journey, in command of the *Rurik* (1815-18), fitted out by Count Romanzov to discover a practicable northeast passage, he passed through Bering Strait, the first navigator to do so in the nineteenth century. He traced the Alaskan coast from Cape Prince of Wales to Cape Krusenstern, 67° N. He carefully surveyed the great sound that now bears his name and made geological discoveries of importance—the ice cliffs of Escholtz Bay, a subject of discussion even to-day—and obtained therefrom bones and tusks of the mammoth. Subsequently he touched at California and Hawaii and in January, 1817, discovered the Romanzov Island, one of the Marshall group. He brought home specimens of many theretofore unknown plants. He made a third voyage in 1823-26. His description of the second voyage appeared in Russian in 1823-26, in German in 1821, and in English in 1821-23 as *Voyage of Discovery*. In 1830 he published an account of the third journey as *Neue Reise um die Welt*.

KOTZEBUE, WILHELM VON (1813-87). A Russian diplomat, brother of the preceding, and under the pseudonym of Wilhelm Augustsohn, a German dramatist. His earliest literary work was the German translation from Vasile Alecsandri's (q.v.) collection of Rumanian folk poems (1857). His other works were the plays *Ein unbarmherziger Freund*, *Zwei Sünderinnen*, and *Bilder und Skizzen aus der Moldau* (1860), *Laskar Viorescu* (1863), a novel based on Moldavian life; *August von Kotzebue, Urtheile der Zeitgenossen und der Gegenwart* (1884).

KOUMISS. See KUMISS.

KOUSSO, ку́с'о. See KOOSSO.

KOVALEVSKY, ко́ва-льѣв'скі, ALEXANDER (1840-1901). A Russian zoologist and embryologist, born at Düna. After study at Heidelberg and Tübingen, he became professor of zoölogy at the University of St. Petersburg. One of the most distinguished zoölogists of his day, it was he who by his researches in the embryology and structure of ascidians and of *Am-*

phioxus first showed the relationship of these forms to one another and their close alliance to vertebrates. He also discovered the branchial slits of *Balanoglossus* and first placed it in the line of vertebrate ancestry. In the embryology and postembryological development of insects his work was fundamental, and he made important contributions to the knowledge of the development and structure of various annelids, cœlenterates, and other animals. Important among his works are: *Anatomie des Balanoglossus delle Chiaje* (1866); *Entwicklungsgeschichte der einfachen Ascidien* (1866); *Entwicklungsgeschichte des Amphioxus lanceolatus* (1867); *Weitere Studien über die Entwicklung der einfachen Ascidien* (1870); *Embryologische Studien an Würmern und Arthropoden* (1869); *Weitere Studien über die Entwicklungsgeschichte des Amphioxus lanceolatus* (1877); *Cœloplana metschnikovi* (1882); *Beiträge zur nachembryonalen Entwicklung der Musciden*, part i (1887); *Anatomie de l'Archæobdella esmontii* de O. Grimm (1896); *Etude sur l'anatomie de l'Acanthobdella peledina* (1896).

KOVALEVSKY, EGOR PETROVITCH (1811-68). A Russian traveler and writer, born in the Government of Kharkov. As a mining engineer, he made extensive journeys in eastern Siberia, the Kirghiz Steppe, and Montenegro (1841). Six years afterward he was intrusted by Mehemet Ali with a geological mission in Upper Egypt, and he published an account of this journey after his return to Russia (2 vols., 1849). He was next sent upon a religious embassy to China, where he put his name to the treaty favoring Russian pretensions in Mongolia (1851). He was subsequently made director of Asiatic affairs at St. Petersburg (1856). He was a promoter of the Khorasan, Chitral, and other expeditions for scientific research and the author of *Peregrinations* (3 vols., 1843-45); *China* (2 vols., 1853); *The War with Turkey in 1853-54* (1868); *The Crimean War* (1869). His last work was *Eastern Affairs in the Twenties*. His collected works, exclusive of miscellaneous verse and prose, fill five volumes (St. Petersburg, 1871-72; with a biographical account).

KOVALEVSKY, SOPHIA VASILYEVNA, better known under her pen name, **SONYA** (1850-91). An eminent Russian mathematician and author, the daughter of General Korvin-Krukovsky. She was born at Moscow and lived at Palibino, her father's estate, in the Government of Vitebsk. When in 1865 Strannolyubsky began to teach her calculus at St. Petersburg, he was amazed at her quickness. About 1867 she and her sister, later a well-known novelist, resolved to go abroad to study. To obtain independence for the purpose a sham marriage, such as was of daily occurrence among Russian youth at this period, was decided upon. A student, Vladimir Kovalevsky, when asked to act as the fictitious husband to give Sonya's sister the necessary legal status, consented on the condition of marrying Sonya herself. In October, 1868, the ceremony was performed, and the three went abroad the following spring, when Sonya's husband took up geology at Jena. In 1869 she studied mathematics at Heidelberg, eliciting the warmest praise from Königsberger and Kirchhoff. In the autumn of 1870 she went to the University of Berlin, where no women were admitted. At a perfunctory test at his house the great Weierstrass was astounded by her lucid

and original solutions of the problems that at the time engaged his most advanced pupils, and henceforth he guided her studies for three years. In 1874 she received the degree of Ph.D. at the University of Göttingen on the basis of her memoir *Zur Theorie der partiellen Differentialgleichungen*. After receiving their degrees Sonya and her husband lived together until he became involved in speculations in housebuilding, newspaper publishing, petroleum wells, etc. The couple parted, and Sonya went abroad to make for herself a name in science. But her husband's death, which followed shortly, was a crushing blow to her, and she resumed scientific work only after a lingering illness. In 1883 Mittag-Leffler, a pupil of Weierstrass and rector of the University of Stockholm, obtained for her a docentship. After a year of lecturing in German she was appointed professor of higher analysis for five years, on condition of teaching in Swedish. She held this professorship until her death. In 1888 she received in person the Prix Bordin (doubled to 5000 francs) of the Paris Academy of Sciences for her *Sur un cas particulier du problème de la rotation d'un corps pesant autour d'un point fixe*. For two other essays the Stockholm Academy awarded her a prize of 1500 kroner in 1889. Besides she contributed a number of important papers to scientific periodicals. She had, moreover, literary abilities in addition to her mathematical talents. In 1877 she wrote *The Privatdozent*—a sketch from the life of a small German university town—which met with a hearty reception. Her *Recollections of Childhood*, published in a Russian magazine (1890), aroused widespread attention. In Sweden she formed an intimate friendship with Anna Leffler, sister of Mittag-Leffler and a striking figure in Scandinavian letters. They had a strong influence upon each other, and of several works written in collaboration, *A Struggle for Happiness* (1887) is the most characteristic. It is a panegyric of love as the main-spring of complete life, and the heroine, Alice, who seeks for it in vain, is Kovalevsky herself. In one of her periods of despair she caught a severe cold, but paid no attention to it, and attended to her lectures almost until her death from pneumonia, Feb. 10, 1891. Consult: Anna Leffler, *Sonya Kovalevsky* (Stockholm, 1892); *Autobiography* (New York, 1895); L. M. Hansson, *See Modern Women: Psychological Sketches*, translated from the German by H. Ramsden (Boston, 1896); G. Retzius, *Das Gehirn des Mathematikers Sonya Kovalevsky* (Stockholm, 1900).

KOVNO. A western government of European Russia, in Lithuania, bordering on Poland and Prussia. Area, 15,518 square miles (Map: Russia, B 3). It has a level surface, interspersed with numerous small lakes and watered by the Niemen and its tributaries. The climate is moderate and healthful. Kovno is chiefly an agricultural region, but the horse and cattle breeding industries are important and growing, while dairying is increasingly pursued. Considerable quantities of grain, mainly wheat and rye, are annually exported. Pop., 1912, 1,819,540, of whom the Lithuanians represented about 73 per cent and the Jews 15 per cent. There are also a number of German colonists. Capital, Kovno.

KOVNO. The capital of the government of the same name in Russia and a first-class fortress, situated at the confluence of the Vilja with the Niemen, 506 miles southwest of St. Petersburg (Map: Russia, B 3). It consists of the

old and the new town and has a number of handsome squares, a park, and an interesting old town hall, opposite which is a curious iron pyramid commemorating the departure of the French in 1812. The educational institutions comprise a Gymnasium and seminaries for priests and teachers. Kovno manufactures wire and nails. The grain trade, once very important, has somewhat declined, but the town is an important centre for the transit trade with Prussia. Pop., 1903, 73,743, 1911, 87,986, of whom nearly half were Jews. Kovno was founded in the eleventh century and from 1384 to 1398 belonged to the Teutonic order. It became Russian after the third partition of Poland in 1795.

KOWLOON, kou'loon', or **KOWLUNG**, kou'-loong'. A peninsula of southern China, situated opposite Hongkong. A small portion of it, 4 square miles, was ceded by the Chinese government to Great Britain in 1860, and a lease of about 376 square miles was obtained in 1898 for a period of 99 years. The population is Chinese and is estimated at about 85,000. The harbor of Kowloon was declared a free port in 1887. Administratively the territory on the mainland forms a part of Hongkong, but the lease stipulated that the city of Kowloon should remain under Chinese jurisdiction. At Kowloon is a station of the Chinese maritime customs. In 1912 imports amounted to hk. tls. 26,685,659, and exports to 12,517,000. The total trade of the port hk. tls. 39,202,659. For the same year the Kowloon Railway reported a traffic of hk. tls. 485,657 in imports and 359,829 in exports, a total of hk. tls. 845,486. See HONGKONG.

KOW'RIE PINE. A New Zealand tree. See **KAURI PINE**.

KOWTOW, or **KOUTOW**. A Chinese form of salutation. See **KOTOW**.

KOXINGA, kô-shing'a or kôk-sin'gâ (Chin, *Ching Ch'ing-kung*) (1623-63). A noted Chinese patriot and pirate, who drove the Dutch out of Formosa and became King of that island. He was born in 1623 in Hualdo, Japan. His father, Ching Chih-lung, originally a poor tailor of Fukien, had married a Japanese wife, and partly by trade and partly by freebooting had amassed great wealth, and as the possessor of a fleet of 3000 junks became master of the seas. About 1628 he apparently abandoned piracy, entered the service of the Ming Emperor of China, then struggling against formidable rebellions within and the attacks of the Manchus without, and became admiral of the Imperial fleet. Some years later his wife joined him at Nanking with the young Ching-kung, who was sent to school, and who at 22 was presented to the Emperor, who gave him a prominent command and conferred upon him his own surname, Chu, remarking that he was worthy to bear the Imperial surname. From this circumstance he became known as Kwôh-hsing-yeh (in Japanese Koku-sen-ya, his worship of the national surname), which was corrupted by the Portuguese into Koxinga. Ere long the Ming Emperor, finding himself unable to hold Nanking, fled to Poochow, which still held out against the Manchus, and Koxinga's father, yielding to the overtures of the Manchus, who promised to make him a prince, was made a prisoner and carried to Peking, where he died. Koxinga, collecting his father's fleet and raising a large army, proceeded to harry the Chinese coast, capturing cities, burning and pillaging, and defying every

fleet sent against him, suffering but one severe defeat, during his siege of Nanking in 1656, when he lost 500 of his ships, besides the camp equipment of his land forces.

In 1661 he attacked the Dutch in Formosa, who surrendered after a four months' siege and retired to Batavia, and Koxinga proclaimed himself King. With this island as a base of operations, he renewed his attacks on China with such ferocity that, in 1682, the Manchu government commanded the inhabitants of the two provinces of Fukien and Kwangtung to remove, on pain of death, 10 miles inland. Every town and village within that belt was burned or leveled to the ground, the roads were broken up, and for six years all means of communication with the sea were cut off and all commerce ceased. This tremendous feat of defensive warfare stands unique in the history of the world. In the following year Koxinga was killed in an engagement with the Dutch and was succeeded by his son, who, as King of Formosa, continued the anti-Manchu warfare.

In 1875, on the memorial of the Imperial Commissioner then in Formosa, and the literati of Taiwanfu, Koxinga was canonized, and a temple erected in his honor. His descendants were given the rank of Marquis, one of the few titles of nobility in China, and the Chinese named one species of rodent after him.

KOYUKUK (kô-yô'kuk) **RIVER**. An Alaskan river that flows into the Yukon about 450 miles from its mouth (Map: Alaska, G 3). The Koyukuk has a drainage basin of 25,000 square miles and is about 650 miles in length, of which 500 miles is navigable for steamboats, to Bettles. Placer mining is successful in the camps around Coldfoot, 100 miles above Bettles. At Allakaket, north of the Arctic circle, is the Episcopal mission of St. John in the Wilderness.

KOYUN'JIK, or **KUYUNJIK**. One of the mounds of ancient Nineveh, and the only one belonging to the city proper which has been excavated with any degree of completeness. It is situated east of the Tigris, opposite the present town of Mosul, and in the part of the ancient city north of the Khosar. The chief discoveries at Koyunjik were made by Layard and Rassam and include palaces of Asurbanipal and Sennacherib and the famous library of the former King. For further particulars, see **NINEVEH**.

KOZLOV, kôz-lôf', **IVAN IVANOVITCH** (1779-1840). A Russian poet, born in Moscow. In 1807 he was Councilor of State in Moscow. Afterward he was transferred to St. Petersburg, but his career was cut short in 1812 by a stroke of paralysis, which deprived him of the power to walk. He also became blind, but studied German and English, became known as a translator of Byron's *Bride of Abydos* and Mickiewicz's sonnets, and wrote an original poem, *Chernets* (The Monk, 1824), which met with fleeting popularity. It was republished along with his other poems in the complete edition of his works brought out in St. Petersburg (1855).

KRA, krâ. The isthmus connecting the Malay Peninsula with the mainland of Asia (Map: Asia, L 7). It has an average width of 44 miles; it is greatly narrowed by the Pakcham and Chumpon rivers.

KRAA. A macaque (q.v.).

KRAAL, krâl (Boer Dutch, perhaps from Sp. *corral*, cattle pen, from *corro*, bull ring, from

correr, Lat. *currere*, to run). A term in general use among the Boers (see **BOER**) in South Africa to denote a village, or a collection of huts in an inclosure, or sometimes a single hut in a stockade.

KRAEVSKY, A. A. See **KRATEVSKY, A. A.**
KRAFFT (KRAFT), kräft, ADAM (1450 or 1455-1507). The principal German sculptor of the late-Gothic period, born probably at Nuremberg. Very little is known of his life or training beyond the fact that the year 1490 found him actively engaged in Nuremberg, a contemporary and friend of the famous founder Peter Vischer. He probably began as a simple stonemason and was trained in the local schools. He appears as a finished master in his earliest-known work at Nuremberg, the celebrated "Seven Stations," completed about 1490, on the road to the cemetery of St. John, but now in the Germanic Museum. They are carved in somewhat coarse sandstone, in high relief, and show in the composition a mixture of pictorial and plastic elements and the realistic hardness in individual figures and drapery which was prevalent in the fifteenth century. Of the same date is the "Calvary," a group of heroic size, in the cemetery of St. John. From 1492 dates the magnificent tomb of the Schreyer family, outside the church of St. Sebaldus, representing the three principal scenes from the Passion of Christ. Of three other sepulchral monuments, dating probably from 1498 to 1501, the epitaph of the Pergerstorff family, in the Frauenkirche, a large high relief representing the Virgin with the infant Christ crowned by angels, with groups of figures kneeling at her feet, is the finest. Similar in subject, but different in treatment, is the Landauer tomb, in the Tetzl Chapel of St. Ägidius' Church, and more simply yet happily conceived is the tomb of the Rebeck family, in the Frauenkirche. Krafft's masterpiece, however, is the elaborate tabernacle in the church of St. Lawrence, erected at a cost of 770 gulden, by Hans Imhof, in 1493-1500. It is a towering pyramid of elegant proportions, reaching a height of 64 feet, and is of amazing richness and delicacy in its decoration, as regards both the many sculptured figures and reliefs and the architectural features. He executed, moreover, large numbers of lesser commissions of a decorative character, such as the relief above the door of the ancient city scales. His last work was the large "Burial of Christ," a group of 16 life-size sandstone statues in the Holzschuler Chapel in the cemetery of St. John (1507). Notwithstanding the number and importance of his commissions, in late life he suffered financial difficulties and borrowed heavily from the Imhof family. According to common tradition, he died in the hospital at Schwalbach. The master's own portrait probably survives in a relief figure of the Schreyer tomb and in a kneeling statue of the tabernacle of St. Lawrence.

Bibliography. "Adam Kraft," in the *Art Journal*, vol. xxi (London, 1869); Wanderer, *Adam Kraft und seine Schule* (Nuremberg, 1869); Bergau, "Adam Kraft," in Dohme, *Kunst und Künstler* (Leipzig, 1877); Bode, *Geschichte der deutschen Plastik* (Berlin, 1887); Daun, *Adam Kraft und die Künstler seiner Zeit* (ib., 1897); id., *Peter Vischer und Adam Kraft* (Bielefeld, 1905).

KRAFFT-EBING, a'bing, RICHARD, BARON VON (1840-1902). An eminent German neurolo-

gist, born at Mannheim. He was educated at Heidelberg, Zurich, Vienna, and Prague. After three years' practice at Baden-Baden, as specialist for nervous and mental diseases, he became professor of psychiatry at the University of Strassburg in 1872. A year later he went to Graz and remained there as professor of psychiatry and nervous diseases until 1889, when he accepted the same professorship at the University of Vienna. He resigned in 1902 and returned to Graz, where he remained until his death. He was the author of numerous books and monographs dealing with pathological psychology in its relation to the law and on nervous and mental diseases. Many of these have been widely translated. Some of the more important are: *Die Melancholie Eine klinische Studie* (1874); *Grundzüge der Kriminalpsychologie für Juristen* (2d ed., 1882); *Die progressive allgemeine Paralyse* (1894); *Nervosität und neurasthenische Zustände* (1895). Four of his books appear in English translations by Craddock: *An Experimental Study in the Domain of Hypnotism* (New York and London, 1889), *Psychosis Menstrualis* (1902), *Psychopathia Sexualis* (12th ed., 1903), a remarkable book, which has become standard in its field, and *Text Book of Insanity* (1905).

KRAFT, ADAM. See **KRAFFT, ADAM.**

KRAG, kråg, THOMAS PETER (1868-1913). A Norwegian poet and novelist, born at Kragerø, a brother of V. A. W. Krag. He was brought up at Christiansand, entered the University of Christiania in 1890, and the next year published *Jon Græff*, narrative verse, in which he combined epic and lyric power. This was followed by *Fra den gamle By* (1892), *Ensomme Mennesker* (1893), and *Mulm* (1893), in which he gives full poetical expression to his love of nature in her more majestic aspects. Nature is more than mere background even in his novels, such as *Kobberslangen* (1895), where he reaches his highest point. *Ada Wilde* (1896), *Ulf Ran* (1897); *Enken* (1899); *Gulvor Kjeld* (2d ed., 1905), *Mester Magnus* (2d ed., 1909). This last undoubtedly expresses his deepest feelings and highest aspirations. Weaker in thought and form are *Fru Beates Hus* (1898), *Hjem* (1900), *Det glade Hjørne* (1901), *Ilduljen* (2d ed., 1905), and *Det Allerhelligste* (3d ed., 1907). *Tusmørke* (1898), *Sorte Skove* (1903), and *Tubalden Fredløse* (1909) are notable for their descriptions. With the drama *Kong Agon* (1894; 2d ed., 1908) he was less successful. Other works are *Ægtemænd og Lygtemænd* (1904), *Maagereden* (1906), and *Offerlam* (1907). Krag stands in the first rank among contemporaneous Norwegian authors. His interpretation of life and nature is that of a mystic; his style is richly imaginative. Consult Erik Lie, in *Dagbladet*, No. 13 (Christiania, 1894), and C. Nærup, in *Illustreret Norsk Literaturhistorie* (ib., 1905).

KRAG, VILHELM ANDREAS WEXELS (1871-). A Norwegian poet, dramatist, and novelist, born at Christiansand, a brother of T. P. Krag. In 1891, a year after he had entered the University of Christiania, he published a collection of poems which won success at once. Both in form and thought they show Danish influence, calling to mind Drachmann and J. P. Jacobsen. In prose followed *Nat* (1892), and the fairy drama *Vester i Blaafield* (1893), with less originality. Among his later poems *Sange fra Syden* (1894), *Nye Digte* (1897), *Norge* (1903),

the lively *Vestlandsviser* (Songs from the West, 1898), take first place. *De Gamles Juleaften* (1894), a drama full of warmth and feeling, met with great success; so also did *De gode Gamle* (1895). Among his other dramas should be mentioned *Den sidste Dag* (1897), *Livet en Leg* (1901), *Sangen om Florens* (1907), *Situationens Herre* (1903), and the idyllic humorous sketch *Baldevisns Bryllup* (1900). The most important of his numerous stories are *Hjemve* (1895); *Den glade Løjtnant* (1896); *Fra de love Stuer* (1897); *Marianne* (1899); *Isaac Kapergast* (1901); *Lille Bodil* (2d ed., 1902); *Den gamle Garde* (1903); *Thea Marie* (1904); *Holmerne de graa* (1905); *Vandringsmand* (1907). Krag was editor of *Juleaften* and *Kringsjaa*, and in 1908-10 director of the National Theatre at Christiania. He married the daughter of Alexander L. Kielland and lived much abroad, part of the time with a government stipend. Consult C. Nærup, *Illustreret Norsk Literaturhistorie* (Christiania, 1905).

KRAGUYEVATS, krà-gu'yà-vàts. The capital of the Serbian province of the same name, situated on the Lepentisa, west of the Morava, 59 miles south of Belgrade, with which it is connected by rail (Map: Balkan Peninsula, C 2). It is the third city in size in Serbia. It was until 1842 the residence of the Serbian princes, and between 1868 and 1880 the Serbian Parliament usually met there. It has a foundry, an arms factory, a Gymnasium, a palace, and an arsenal. Pop., 1900, 15,503; 1910, 18,452.

KRAILSHEIM, krils'him. A town of Germany. See CRAILSHEIM.

KRAIN. See CARNIOLA.

KRAIT, krit (East Indian name), or **CRAIT**. The most dreaded of East Indian venomous snakes (*Bungarus caeruleus*). It is a near relative of the cobras and is dark brown or purplish, with narrow crossbars or white specks or alternately barred brown and yellow. It sometimes reaches a length of 4 feet and is active and fearless, pursuing and feeding upon rats, lizards, and snakes. It is numerous throughout all the warm parts of India, especially in Bengal, and is likely to creep into houses and tents. The authorities believe that it causes more deaths in India, Assam, and Burma than any other snake. Several other species of the genus, called rock snakes by English people in India, are known, one of them being the still larger king snake or rajsamp (*Bungarus fasciatus*), which is bright yellow, encircled with many black rings. A third species is peculiar to Ceylon, and others extend the range of the genus as far east as southern China. Consult: Fayer, *Thanatophidia of India* (London, 1874), and Ewart, *Poisonous Snakes of India* (London, 1878), both with colored plates; *Proceedings of the Zoological Society of London* (ib., 1899); and especially Wall, "The Poisonous Snakes of India," in *Journal of the Bombay Natural History Society*, vol. xvii (Bombay, 1906).

KRAJOVA, krà-yò'vâ. A town in Rumania. See CRAIOVA.

KRAJOWA. See KRAY VON KRAJOWA.

KRAKATOA, krà'kà-tò'à, more correctly **KRAKATAU**. A volcano on the small island of Pulu Rakata in the Sunda Strait between Java and Sumatra (Map: East Indies, C 7). The island has an area of 6 square miles, about one-half of its former size. The volcano had been in a dormant state since 1680, when, in

May, 1883, it became active, culminating on the night of August 26-27 in one of the most disastrous eruptions known in history, presenting the rare type of explosion. A mass of rock material, estimated at more than a cubic mile, was thrown into the air in the form of lapilli and dust by a succession of explosions that were heard over 150 miles away. The dust was carried to an estimated vertical distance of 17 miles, and in the upper air currents it was borne eastward in a complete circuit of the globe. The suspension of this finely divided material in the atmosphere has been established as the cause of the brilliant sunsets which during the following winter and spring were observed over a large portion of the earth's surface. The explosions were followed by violent atmospheric disturbances that passed around the earth at the rate of 700 miles an hour. A series of gigantic sea waves was also generated, and these caused great loss of life. The water advancing upon the shores of the neighboring islands swept away whole villages, while the oscillations were noticeable as far as the shores of South America. After the terrible convulsions it was found that the northern part of the island, including the highest peak, had disappeared. The total loss of life probably exceeded 30,000, one authority estimating it at 36,380. The island is without permanent population. Consult Verbeek, *Krakatau* (Batavia, 1884), and Royal Society of London, *The Eruption of Krakatoa and Subsequent Phenomena*, edited by J. G. Symons (London, 1888). See VOLCANO.

KRAKEN, krà'ken (Dan., from Norweg *krake*, sort of sea monster). A mythical colossal creature said to have haunted the seas and coast of Norway. Its shape and habits were described by the Norwegian Bishop Pontoppidan in 1750. According to his account, its back was about a mile and a half in circumference; its body rose from the sea like an island, stretching out mastlike arms capable of dragging down the largest ship, and when it sank towards the bottom, it caused a whirlpool in which large vessels were involved to their destruction. It was also said to make the waters around it thick and turbid and thus was able to devour the shoals of fishes that swam to the place attracted by the musky smell.

The origin of the various stories of the kraken is probably attributable to the occasional occurrence in the northern Atlantic of colossal squid. It is these gigantic animals which on rare occasions have been seen by fishermen and others and which have given rise in past ages to the stories or fables of this kind. See SQUID.

Consult: A. S. Packard, "Colossal Cuttlefishes," in *American Naturalist*, vol. vii (Salem, 1873); A. E. Verrill, "The Colossal Cephalopods of the North Atlantic," in *American Naturalist*, vol. ix (ib., 1875); id., "Gigantic Squids," in *Transactions of the Connecticut Academy*, vol. v (New Haven, 1879); J. Gibson, *Monsters of the Sea* (London, 1887).

KRAMBAMBULI, kràm-bàm'bù-lè. A Slavic term originally signifying cherry brandy; then, especially in student slang, any spirituous drink. Krambambuli is the title of one of the most popular German student songs, the words of which were written by Wittekind in Danzig in 1745 under the pseudonym of Crescentius Koromandel. The music is a popular eighteenth-

century air. The song in an English translation is also popular in American colleges.

KRAMERIA. See RHATANY.

KRANS, HORATIO SHEAFE (1872-). An American author and editor, born in Boston and educated at Columbia University (A.B., 1894; Ph.D., 1903). After 1900 he was engaged in literary and editorial work for magazines and reviews and was literary adviser to G. P. Putnam's Sons in 1905-09 and to the Sturgis and Walton Company in 1909-13. He wrote *Irish Life in Irish Fiction* (1903), *William Butler Yeats and the Irish Literary Revival* (1904), and *Oliver Goldsmith, a Critical Biography* (1907); he edited the *Lincoln Tribute Book* (1909), *English Love Poems* (1909), *The Lost Art of Conversation* (1910), and, as associate, *The World's Wit and Humor* (10 vols., 1906). In 1914 he served as associate editor of the NEW INTERNATIONAL YEAR BOOK, and he contributed articles on topics in American and English literature to the second edition of the NEW INTERNATIONAL ENCYCLOPÆDIA.

KRANTZ, KRÄNTZ, ALBERT (*1450-1517). A German scholar and statesman. He was born in Hamburg, traveled widely in Europe, studied theology and philosophy at Hamburg and Rostock, and became rector of the latter university. As syndic of Hamburg he was present in 1489 at the Hansa-Assembly at Wismar and was sent as Ambassador to France in 1497 and to England in 1499. In 1500 he was chosen arbitrator by John, King of Denmark, and Frederick, Duke of Holstein, in their dispute concerning the Province of Ditmarschen. He considered Wiclif and Huss as heretics and was not in sympathy with the movement . . . by Luther, although he agreed with his attitude on the subject of indulgences and introduced many ecclesiastical reforms while dean of the chapter of Hamburg, to which he was appointed in 1508. His principal works are *Chronica Regnorum Aquilonarum*, published in Strassburg in 1562, and an ecclesiastical history of Saxony. Consult Hauck-Herzog, *Real-Encyclopædie für protestantische Theologie und Kirche* (3d ed., Leipzig, 1896-1913).

KRANTZ, JEAN BAPTISTE SÉBASTIEN (1817-99). A French engineer and politician, born at Arches, Vosges, and educated at the Polytechnique (1836) and the Ecole des Ponts et Chaussées (1838). He was best known as constructor of the Industrial Palace at the Exposition of 1867, as inventor of a movable dam for the Seine (1868), and for his service in the siege of Paris in 1871. In the last year he was elected a deputy and in 1876 was elected to the Senate, where he opposed Boulanger and was leader of the Opportunists. He wrote *Projet de création d'une armée des travaux publics* (1847) and *Observations au sujet des chemins de fer* (1875).

KRANTZ, JULES FRANÇOIS EMILE (1821-1914). A French naval officer, born at Givet, a cousin of J. B. S. Krantz. He entered the navy in 1837, was captain of a frigate by 1861, and in 1869 was promoted to command the training ship *Louis XIV*. In the Franco-German War he directed the defenses of Fort Ivry and in 1871 was chief of department in the Ministry of Marine; two years afterward he commanded the naval division in Chinese waters as rear admiral. On his return to France he was made director of the marine works and vice admiral in 1877. He was placed on the reserve in 1886 and was Minister of

Marine in successive cabinets in 1888-89. Noted as an authority on manœuvres and as a mathematician, Krantz published *Éléments de la théorie du navire* (1852) and *Considérations sur les rouls des bâtiments* (1867).

KRAPF, KRÄPF, JOHANN LUDWIG (1810-81). A German missionary, explorer in British East Africa, and specialist in African linguistics. He was born at Derendingen, near Tübingen, where he studied theology. In 1837 he went to Abyssinia as missionary of the English Church Missionary Society and with his fellows, Erhardt and Rebmann, made many valuable tours into Usambara (1848, 1852) and Ukamba (1849, 1851). Krapf brought to Europe the first definite information about the Victoria Nyanza, Mount Kilimanjaro, and Mount Kenia, which he visited in 1849. After a short stay in England he returned to Africa in 1854, but was forbidden by King Theodore to enter Abyssinia. He returned to Germany and lived near Stuttgart till 1867, when he joined the English expedition to Abyssinia. He wrote *Reisen in Ostafrika in den Jahren 1837-55* (2d ed., 1867); *Vocabulary of Sw East African Languages* (1850), *Elements of the Kisuahili Language* (1850); several biblical translations into African dialects; and the *Dictionary of the Swahili Language* (1882). Consult Claus, *Ludwig Krapf* (Basel, 1882).

KRAPINA, KRÄPĚNÁ. See PALEOLITHIC PERIOD.

KRAPOTKIN. See KROPOTKIN.

KRASICKI, KRA-SHĚT'SKĚ, IGNACY (1735-1801). A Polish writer and social worker. He was born in Dubiecko and studied in Lemberg and Rome. In 1767 he was appointed Bishop of Ermeland, but he lived mostly in Warsaw. After the first partition of Poland, in 1772, he enjoyed the favor of Frederick the Great. In 1778 he published his mock-heroic *Mousiad (Myszeas)*, full of allusions to the state disorders and the wrangles of Polish nobility, and also his *Monachomachia*, in which he ridicules the cloistered life of the monks. This latter work aroused a storm of criticism, and his witty reply, *Antimonachomachia* (1780), intensified public interest in the matter. Besides these books he wrote much verse and prose and translated Ossian into Polish. In 1795 he was made Archbishop of Gnesen. He died six years later, in Berlin. His works were published by Dmochowski, in 10 volumes (Warsaw, 1803-04; latest ed., 1878). The *Monachomachia* was translated into German (*Der Monchekrieg*) by Winkiewski (Berlin, 1870). Consult J. J. Kraszewski, *Ignacy Krasicki* (Warsaw, 1880), and Józef Treliak, I, "Krasicki, Charakterystyka wramach szkicu biograficznego," in *Biblioteka Warszawska*, (ib., 1901).

KRASINSKI, KRÄ-SHĚ'NY'-SKĚ, ZYGMUNT, COUNT (1812-59). One of Poland's greatest poets. He was born and died in Paris. He left Russia, where his father, who held a high military position, was despised by his Polish countrymen, who accused him of Russophile sentiments, and devoted himself to literature, becoming a personal friend of Mickiewicz (q.v.) and an adherent of romanticism. In 1834 he published his *Undivine Comedy (Nieboska Komedia)*. It deals with the struggle between degenerated aristocracy (Count Henry) and the suffering people (Pancratius). Both Henry and Pancratius die on the battlefield, and a cross appears in the heavens, symbolizing the ulti-

mate triumph of religion over the passions of men. The dramatic poem *Irydion* (Paris, 1836) was an allegory of Poland's sufferings. Like the earliest Slavophiles, he believed in the regeneration of the world through his country, of whose ultimate restoration he felt sure. His last great work, *Dawn* (*Prozedsвіт*, 1843), is a philosophical poem, wherein he embodied his view of the world. In 1845 he published his *Psalms of the Future: Of Faith, Hope, and Love* (*Psalmi przyzłości*). These were directed against the impending rebellion. For political reasons his name did not appear on his works during his lifetime. The best edition is in four volumes (Lemberg, 1880-88). German translations of his works are: *Ungöttliche Komödie*, by Batornicki (Leipzig, 1841); *Irydion* (ib., 1881); and the novels *Versuchung* (trans. of *Pokusa*, Cracow, 1881) and *Sommernacht* (*Noć letnia*, Vienna, 1881). Consult: Tarnowski, *Zygmunt Krasński* (Cracow, 1892), which is the best, the *Correspondence* published in Lemberg (1880-88), also Julian Klaczko, "Polish Poetry in the Nineteenth Century," in Z. Krasński, *The Undivine Comedy* (Philadelphia, 1875), Juliusz Kleiner, *Zygmunt Krasński: Dzieje Myśli* (2 vols, Lemberg, 1912); Anna Ender, "Sigismondo Krasński," in *Nuova Antologia*, vol. clxiv (5th series, Rome, 1913).

KRASNIK; kräs'nik. A town in Russian Poland in the Province of Lublin, 28 miles southwest of the city of Lublin. Pop., 1910, 9178. It was the scene of a three weeks' battle between the Austrians and Russians in the European War of 1914. During the first week the Austrians drove the Russians towards Lublin, but upon the arrival of heavy reinforcements the latter compelled the former to retreat hastily across the boundary into Galicia. See WAR IN EUROPE.

KRASNOVODSK, kräs'no-vódsk'. A fortress and capital of the Transcasian Province of Asiatic Russia, situated on Krasnovodsk Bay, on the east coast of the Caspian Sea (Map: Asia, G 5). It is 69 feet below sea level and is the starting point of the Transcasian Railway to Merv and Bokhara. Its industries are the manufacture of salt and sulphur and the catching of fish and seals. Pop., 1910, 7775.

KRASNOYARSK, kräs'no-yärsk'. The capital of the Government of Yeniseisk, Siberia, situated on the Yenisei and on the Trans-Siberian Railway, about 2720 miles by rail from Moscow (Map Asia, K 3). It has 15 churches, Russian, Lutheran, and Catholic, a synagogue, a theological and a teachers' seminary, a library, a technical and a railway school, a museum, and a theatre. The chief manufactures are brick, leather, and soap. There is also a considerable transit trade in tea. The town was founded in 1628 as a fortified prison settlement. Pop., 1904, 40,910; 1912, 80,102.

KRASNOYE SELO, kräs'nó-ye sä-ló'. A well-known summer resort in the Government of St. Petersburg, Russia, on the Ligovka River and the St. Petersburg-Reval Railway. It has an Imperial palace with a park and a number of villas, the summer residences of the Russian nobility. The Imperial Guards camp here during the summer, and in August the Czar holds a parade in which about 75,000 troops take part. Pop., 1897, 3286; 1912, 3741.

KRASZEWSKI, krá-shéf'ské, JÓZEF IGNAOY (1812-87). A Polish novelist, historian, aesthetician, publicist, and poet, born in Warsaw. He

studied history and philology at the University of Vilna, took part in the uprising of 1830-31, and was imprisoned until 1833. He settled on his country estate in Volhynia in 1837 and devoted himself to literature. The works which he produced at this period show clearly the influences of Gogol, Dickens, and Balzac. Between 1853 and 1858 he was curator of schools in Volhynia. In 1859 he took up at Warsaw the publication of the *Gazeta Polska*. Exiled in 1863, he settled in Dresden and in 1876 became a Saxon subject. In 1884 he was sentenced to three and a half years' imprisonment on the charge of high treason in having procured plans of a German fortress for the French government, but after a time received a six months' leave of absence, on account of his impaired health, on depositing 20,000 marks as security. He went to Italy and never returned to prison, dying in Geneva. Kraszewski was the most productive of all Polish writers and one of the most productive of all literatures; of his works, numbering more than 350 titles and about 600 volumes, a selection in 102 volumes appeared in Lemberg in 1871-75. Most of them are works of fiction. He chose as themes social political questions, his point of view being democratic and nationalist; the greater number of his novels deal with Polish history, especially the history of Poland in the eighteenth century, which the author knew thoroughly. Besides fiction Kraszewski wrote short stories and poetry. His most important poetical work is *Anafielas* (1839-44), a great epic trilogy of Lithuania. A German translation of it appeared in 1883 at Posen. George Eliot is said to have derived the idea of *Silas Marner* from his *Jermola, the Potter* (1857). Some of his sketches Kraszewski wrote under the pseudonym Boleslawita. Selections from his works were published in 12 volumes in German (Vienna, 1880-81). A number of his novels and tales have been translated into the principal European languages. *Morituri* (1875) and *Resurrecturi* (1876), are perhaps the best known outside of Poland. Consult Bohdanowitsch, *Kraszewski in seinem Werken und seinen Werken*, which is overenthusiastic (Leipzig, 1879), and, in Polish, Chmielowski, *Józef Ignacy Kraszewski* (Cracow, 1888). He has been called the Dumas of Polish literature.

KRAUS, krous, FRANZ XAVER (1840-1901). A German Roman Catholic theologian and archaeologist, born at Treves. He studied at the universities of Treves, Freiburg, Bonn, and Paris. In 1872 he became professor extraordinary of history and Christian archaeology at the University of Strassburg and in 1878 he was appointed professor ordinarius of Church history at the University of Freiburg. His publications include: *Ueber das Studium der Theologie sonst und jetzt* (1890); *Lehrbuch der Kirchengeschichte* (1872-87); *Realencyclopädie der christlichen Altertümer* (1880-86); *Dante, sein Leben und sein Werk* (1897). Consult Hauviller, *Franz Xaver Kraus, ein Lebensbild* (Freiburg, 1904).

KRAUS-BOELTÉ, krous'-bul'tá, MARIA (1836-). An American kindergarten expert, born in Mecklenburg-Schwerin, Germany, the daughter of Judge J. L. E. Boelté. After receiving a full course of kindergarten training in Germany, in 1860 she entered active work in London, where, two years later, she had charge of a kindergarten exhibit at the London Inter-

national Exhibition. In 1867 she went to Hamburg to teach in the Fröbel Union, and later, at Lübeck, she had charge of a kindergarten, with classes connected for the training of teachers. She returned to England in 1870, came to the United States in 1872, and established, with the aid of Henrietta B. Haines, a kindergarten and mother's class in New York. In 1873 she married Prof. John Kraus and with him opened a Seminary for Kindergarten teachers, which she continued alone after her husband's death, in 1896. She lectured on kindergarten methods at the New York University Summer School in 1903, 1904, and 1907, and at educational meetings. In 1899-1900 she was president of the kindergarten department of the National Education Association. Besides several "научно-педагогические" and articles, she is author, with John Kraus, of *The Kindergarten Guide* (2 vols., 1877; new ed., 1905).

KRAUSE, krou'ze, ERNST LUDWIG (1839-1903) A German author, known under the pseudonym Carus Sterne, born at Zielentz. He soon abandoned his original profession of pharmacist for the study of natural history and the history of civilization, settled in Berlin in 1866, and contributed much to the dissemination of natural science, especially of Darwin's theories. In this connection he was led by his researches to recognize in Charles Darwin's grandfather, Erasmus Darwin (q.v.), the true originator of the theory of the descent of man. Darwin caused the treatise devoted to this subject to be translated into English and to be supplemented by a biography of his grandfather (1879). In conjunction with Darwin and Haeckel, Sterne edited the monthly *Kosmos* (1877-82). His other publications include: *Werden und Vergehen: Eine Entwicklungsgeschichte des Naturganzen* (6th ed., 1905); *Die Krone der Schöpfung* (1884); *Charles Darwin und sein Verhältnis zu Deutschland* (1885); *Plaudereien aus dem Paradiese: Der Naturzustand des Menschen* (1886); *Die allgemeine Weltanschauung in ihrer historischen Entwicklung* (1889); *Natur und Kunst* (1891); *Tuskoland* (1891); *Die Trojaburgen Nordeuropas* (1893); *Die nordische Herkunft der Trojasage* (1893); *Geschichte der biologischen Wissenschaften im neunzehnten Jahrhundert* (1901).

KRAUSE, KARL CHRISTIAN FRIEDRICH (1781-1832). A German philosopher and writer on Freemasonry. He studied philosophy at Jena, became privatdocent there in 1802, then taught in Dresden, and lectured subsequently in Berlin and Göttingen. Though his courses in philosophy were very popular, he was unable to secure a professorship. For this purpose he went to Munich (1831), but was disliked as a Socialist, since he maintained that all mankind should be associated in a common endeavor for universal development. Feeling that he found in Freemasonry the first principles of such an organization, he had joined the order in 1805 and written much in its interest. He roused resentment, however, by his independent theories and was expelled in 1810. Among his works on this subject were *Die drei ältesten Kunsturkunden der Freimaurerbrüderschaft* (3d ed., 1849) and *Höhere Vereingung der echt überlieferten Grundsymbole der Freimaurerei* (3d ed., 1820). In philosophy Krause's work has been differently estimated by different historians. Heinze, in his revision of Ueberweg's *History of Philosophy*, speaks of Krause as "the

many-sided, peculiar, and deep thinker," while Windelband says that "Krause has scarcely any other originality than the very objectionable one of presenting the thought common to the whole idealistic development in an unintelligible terminology." The universe, for Krause, exists in God. God is essence prior and superior to all distinction and difference and yet comprehending within itself all distinctions and differences. These comprehended differences constitute finite realities, which are thus members of the articulate system of divine essence. Organic union is thus a fundamental fact of reality and hence must be striven for by man in his moral, social, and political life. Every individual should be a member of a union (*Bund*), and every union should belong to a larger union, until at last all humanity is included in a definitely organized social system. His most important works on philosophy, published in his lifetime, are: *Entwurf des Systems der Philosophie* (1804); *System der Sittenlehre* (1810); *Das Urbild der Menschheit* (1811); *Vorlesungen über das System der Philosophie* (1828). After his death it was found that he had left behind him an immense amount of matter in manuscript, part of which has been published. Consult: S. Lindemann, *Uebersichtliche Darstellung des Lebens und der Wissenschaftslehre Krauses und dessen Standpunktes zur Freimaurerbrüderschaft* (Munich, 1839); Hohfeld, *Die Krausesche Philosophie* (Jena, 1879); Martin, *Krauses Leben, Lehre und Bedeutung* (Leipzig, 1881); Eucken, *Zur Erinnerung an Krause* (ib., 1881); Ludwig Kunze, *Die pädagogischen Gedanken K. Chr. Fr. Krauses in ihren Zusammenhänge mit seiner Philosophie dargestellt* (Langensalza, 1911).

KRAUSS, krouss, GABRIELE (1842-1906) An Austrian dramatic soprano, born in Vienna. She studied at the conservatory in that city and with Marchesi. She was a member of the Vienna Court Opera (1860-67), at the Théâtre Italien (1867-71), and, after singing at Baden and Milan, was engaged at the Grand Opéra, Paris (1875-86). In 1880 she was made an officer of the Académie. Her most famous rôles were Mathilde (in *Les Huguenots*), Aida, Marguerite (in *Faust*), and Desdemona.

KRAUTH, krouth, CHARLES PORTERFIELD (1823-83). An American Lutheran theologian, son of Charles Philip Krauth. He was born at Martinsburg, Va., graduated at Pennsylvania College, Gettysburg, in 1839, and at the theological seminary there in 1841. Ordained to the ministry, he served as pastor of churches in Virginia, Maryland, and Pennsylvania until 1864, when he was appointed professor of systematic theology in the Lutheran Theological Seminary at Philadelphia. Here he remained until his death. He was also professor of intellectual and moral philosophy at the University of Pennsylvania after 1868 and vice provost of the same university after 1873. Krauth was chairman of the Old Testament company of the American Bible Revision Committee and an authority on the history, doctrines, and liturgy of the Lutheran church. His most important works were *The Conservative Reformation and its Theology* (1871) and *Vocabulary of Philosophical Sciences* (1879).

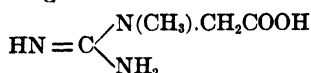
KRAVITCHINSKI, kráf-chín'ski. See STEP-NIAK.

KRAYEVSKY, krä-yéf'ski, or **KRAEVSKI**, ANDREI ALEXANDROVITCH (1810-89). A Rus-

sian journalist, born in Moscow. He was educated at the university there and taught for a time, but began editorial work in 1839 with the *Otechestvennyia Zapiski*, which he continued for 10 years, being also connected with the *Russkii Invalid* from 1857. In 1863 he established the *Golos*, an influential paper, on the Liberal side of Russian politics, which had a very large circulation.

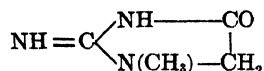
KRAY VON KRAJOWA, kri fôn krà-yô'vâ, PAUL, BARON (1735-1804) An Austrian general, born at Késmárk, Hungary. He entered the Imperial army in 1754, fought in the Seven Years' War and in the war with the Turks (1788-89), became major general and Baron after the Peace of 1790, and commanded in the Netherlands. In 1794 he defeated Pichegru at Catrou, in 1796 beat Kléber near Wetzlar, took part in the battles of Amberg and Würzburg, and was made field marshal lieutenant. His reverses in 1797 were followed by the victories of Verona, Legnago, Magnano, and Mantua in the Italian campaign of 1799. In the following year he succeeded Archduke Charles in command of the army in Germany, but was unsuccessful. The truce of Parsdorf brought to an end his operations in Germany, and he was compelled to turn over the command to Archduke John. He retired to Pest and died there.

KREATINE (from Gk κρέας, *kreas*, flesh), or **CREATINE**, $C_4H_7N_3O_2$. An organic substance found in considerable quantities in the muscles and the nervous tissues of vertebrata. When boiled with baryta water, it is readily converted into urea, and hence it is considered as one of the probable mother substances of urea in the body. It also occurs in urine, but the fact that it is found there has been attributed to the transformation of an allied substance, kreatinine, during the process of extraction. Kreatine may be prepared from Liebig's beef extract by dissolving in water and precipitating the solution with an excess of basic acetate of lead, the kreatine remaining in solution; the excess of lead is eliminated by passing a current of sulphureted hydrogen through the solution, which is again filtered and evaporated on the water bath to the consistency of a thin sirup. On standing in a cool place the kreatine separates out from the latter in somewhat impure form; it is then purified by recrystallization from water. With one molecule of water kreatine crystallizes in the form of colorless rhombic prisms, sparingly soluble in cold water and alcohol and insoluble in ether, but very readily soluble in hot water. Chemically kreatine acts as a weak base, forming crystalline compounds with acids. Its presence may be detected by converting it into kreatinine (by boiling with dilute mineral acids) and identifying the latter (See KREATININE.) The chemical constitution of kreatine is represented by the following formula:



KREATININE, or **CREATININE** (from *kreatine*), $C_4H_7N_3O$. A chemical substance closely allied to kreatine, from which it may be prepared by heating with dilute mineral acids. It is a natural constituent of urine and of the muscles of certain fishes and has been found in small quantities in sweat. It is a colorless crystalline substance, soluble in water and in

alcohol and acting as a strong base, forming crystalline compounds with acids. One of its characteristic reactions is the direct combination with zinc chloride, resulting in the formation of a crystalline salt having the formula $(C_4H_7N_3O).ZnCl_2$. By this reaction kreatinine may be readily prepared from urine, which is for this purpose evaporated to a small volume and precipitated with zinc chloride; the zinc chloride compound of kreatinine is decomposed by boiling with oxide of lead, and the kreatinine thus set free is purified by crystallization. The zinc chloride reaction may also be employed for detecting the presence of kreatinine. The following (*Jaffé's reaction*) is another delicate test for kreatinine: A small quantity of a solution of picric acid in water is added to the liquid in which the presence of kreatinine is suspected; if then a few drops of a weak sodium hydroxide solution are added, an intense red coloration is produced if kreatinine is present. Kreatinine is readily converted into kreatine by combining with the elements of water. (See KREATINE.) The chemical constitution of kreatinine is represented by the following formula:



KREBS, krëbz. A city in Pittsburg Co., Okla., 3 miles (direct) east-southeast of McAlester, on the Chicago, Rock Island, and Pacific, and the Missouri, Kansas, and Texas railroads (Map: Oklahoma, F 4). It is in a productive coal and cotton region, coal mining being the chief industry. The water works are owned by the city. Pop., 1900, 1508; 1910, 2884.

KREFELD, krä'felt, or **CREFELD**. A prominent manufacturing town of Prussia, situated in the Rhine Province, near the left bank of the Rhine, 34 miles northwest of Cologne (Map: Prussia, B 3). Among its few noteworthy buildings may be mentioned the town hall, with good frescoes, and the Kaiser Wilhelm Museum, with work by the Della Robbias, Eberlein, Meunier, and Rodin. It has many memorials, including one to Karl Wilhelm. The educational institutions include a Gymnasium, two Realschulen, a textile academy, with a textile museum, a teacher's seminary, a commercial academy, an agricultural school, and a conservatory of music. As a centre of the silk and the velvet industries, Krefeld has few rivals in Europe. These industries, established by the Protestants and Mennonites during the seventeenth and eighteenth centuries, employ over 20,000 looms and now give occupation to the larger part of the industrial population and yield an annual output of over \$20,000,000. It has a harbor on the Rhine and does a good river trade. Krefeld manufactures cotton goods, machinery, spirits, carpets, cravats, soap, celluloid, and chemical goods, boilers, leather, and beer. A railway repair shop is located here. The commerce is chiefly in local manufactures and coal. Pop., 1900, 106,893; 1910, 129,406, over four-fifths Roman Catholic. Krefeld is first mentioned in 1166. It obtained municipal privileges in 1373, and, after having been in the possession of the Count of Mors and the princes of Nassau-Orange, it passed with the death of William III of England to Prussia.

KREHBIEL, krä'bél, HENRY EDWARD (1854-). An American musical author and critic, born at Ann Arbor, Mich. He studied law in

Cincinnati, where he acted as musical critic of the *Cincinnati Gazette* from 1874 to 1878. Later he studied the history and theory of music and eventually came to be known as a leading critical authority. For a time he was editor of the *New York Musical Review* and in 1880 he became musical critic of the *New York Tribune*. His writings include: *Studies in the Wagnerian Drama* (1891); *The Philharmonic Society of New York: A Memorial* (1892); *How to Listen to Music* (1896); *Music and Manners in the Classical Period* (1898); *Chapters of Opera* (1908); *The Pianoforte and its Music* (1910); *Afro-American Folk-Songs* (1913). In collaboration with Russell Sturgis he published the *Annotated Bibliography of Fine Art* (1897). Other works are *A Translation of Courvoisier's Technique of Violin Playing* (2d ed., 1896) and articles in *Music of the Modern World* (1895-97). He was American editor of the new edition of *Groves's Dictionary of Music and Musicians* (1904-10).

KREHL, kräl, CHRISTOPH LUDOLF EHRENFRIED (1825-1909). A German Orientalist, born at Meissen, and educated at Leipzig, Tübingen, Paris, and St. Petersburg. After a year's residence in the latter place, he became secretary of the Royal Library of Dresden in 1852 and in 1861 went to Leipzig as librarian of the university and professor of Oriental languages. He wrote: *Ueber die Religion der vorislamischen Araber* (1863), *Ueber die koranische Lehre von der Prädestination* (1870), *Beiträge zur Charakteristik der Lehre vom Glauben im Islam* (1877), *Das Leben und die Lehre des Muhammed*, vol. 1 (1884); and edited certain Arabic texts.

KREIL, kril, KARL (1798-1862). An Austrian meteorologist and astronomer, born in Ried. He was educated at the University of Vienna, where he studied law before devoting himself to astronomy. In 1827 he became an assistant at the Vienna Observatory, from which he went to Milan in 1831 and thence in 1838 to Prague, where he was from 1845 to 1851 director of the observatory. In 1851 he returned to Vienna to take charge of the Central Meteorological and Magnetic Bureau. He made particularly important studies of terrestrial magnetism, discovering (1841) that it is practically unaffected by the moon, and writing *Anleitung zu den magnetischen Beobachtungen* (2d ed., 1858). Many automatically registering meteorological machines were devised by him. He edited from 1849 until his death the *Jahrbuch* of the Central Bureau at Vienna. Among his many published works are: *Cenni storici e teorici sulle comete* (1832); *Ueber die Natur und Bewegung der Kometen* (1843), studies of lunar influence on magnetic declination and on atmospheric conditions; and *Klimatologie von Böhmen* (1865).

KREISLER, kri'zlér, FRIEDRICH (1875-). An Austrian violinist, born in Vienna. When only seven years of age, he was admitted to the Vienna Conservatory and the class of Hellmesberger. Having won the gold medal for violin playing in 1885, he left and went for further study to Paris, where he became a pupil of Massart (violin) and Delibes (composition) at the Conservatoire. At the end of two years he left that institution also as the winner of the gold medal. Equipped with a stupendous technique, he began his concert tours in 1888 and visited the United States in the following

year, appearing jointly with Moritz Rosenthal. After his return he temporarily abandoned the violin, studying art and medicine and serving a year in the army. In the spring of 1899 he reappeared in Berlin and in the fall made a second tour of the United States. It now became evident that he had completely changed his ideals. From a fabulous technician, whose chief ambition seemed to be a desire to rival Paganini, he had developed into an interpretative artist of the first rank. To-day the verdict of those most competent to judge is that Kreisler is, without any qualification, the greatest living master of the violin. His repertory is enormous, comprising practically everything of note that has been written since the seventeenth century. Certainly no other violinist offers programmes of such variety or diversity of styles. He plays throughout the civilized world, and a season seldom passes that he does not appear in the United States. In 1914 he fought for Austria in the European War until he was wounded at Lemberg. Later in the year he was able to come to America to fill engagements.

KREITTMAYR, krit'mir, ALOYS WIGULAUS, BARON VON (1705-90). A Bavarian jurist and statesman, born in Munich. He studied law at the universities of Salzburg, Ingolstadt, Utrecht, and Leyden, and in 1745 was made a member of the Privy Council at Munich and created Baron. In 1749 he was made Vice Chancellor and Cabinet Minister, and held the former office until his death. He codified the most important branches of law of his country, under such titles as *Codex Juris Bavarici Criminalis* (3d ed., 1785), *Codex Juris Bavarici Judiciarii* (latest ed., 1841), and *Codex Maximilianus Bavaricus Civilis*, supplying every section with annotations (latest ed., 1841). He also published *Grundriss der gemeinen und bayerischen Privatrechtsgelehrsamkeit* (1768) and *Grundriss des allgemeinen deutschen und bayerischen Staatsrechts* (2d ed., 1789). In recognition of his services to the state a monument was erected to his memory at Munich in 1845. Consult the biography by Kalb (Munich, 1825).

KREILING, krä'ling, AUGUST VON (1819-79). A German painter and sculptor. He was born at Osnabrück, May 23, 1819, and studied sculpture under Schwanthaler at Munich, but soon began painting. His first important work was the decoration of the ceiling of the Royal Theatre in Hanover. In 1853 he was appointed director of the Art School at Nuremberg, which he developed into a prominent school of industrial art. At the same time he painted a large fresco, the "Coronation of Louis the Bavarian," for the Maximilianeum at Munich; restored and decorated the old castle at Nuremberg; modeled colossal bronze statues of Prince Henry of Reuss, at Gera, and of Kepler, at Weil, and the large bronze fountain presented by Mr. Probasco to Cincinnati. His best-known painting is "The Education of Erwin von Steinbach," in the Museum of Hanover.

KRELL, or **CRELL**, NIKOLAUS (c.1551-1601). A Saxon Chancellor and religious reformer. He was born at Leipzig, educated there, was made Chancellor in 1589, and, becoming a convert to Calvinism, used his office to the full to favor that form of Protestantism, although fully aware of the strong attachment of his fellow countrymen to Lutheranism. He introduced a Calvinistic catechism, and an edition of the German Bible with Calvinistic notes



MOSCOW
THE KREMLIN

—hence called Krell's Bible. He substituted Calvinists for Lutherans in prominent pulpits and did not require subscription to the Formula of Concord. In 1591, on the death of Christian, Elector of Saxony, who had upheld him, he was deposed, imprisoned, and tried, partly on political but also on religious grounds. After long imprisonment he was beheaded in Dresden, Oct. 9, 1601. Consult: Georg Brandes, *Der Kanzler Krell* (Leipzig, 1873); Bohnenstaad, *Das Processverfahren gegen den kursächsischen Kanzler Dr Nicolaus Krell, 1591 bis 1601* (Halle, 1901). See CRYPTO-CALVINISTS.

KREMENETZ, krēm'ye-nyét's. The chief town of a district of the same name in the Government of Volhynia, Russia, 182 miles west of Zhitomir (Map: Russia, C 4). In the vicinity are the ruins of an ancient Polish castle. Flour, mead, and beer are the chief products, and there is some trade in grain. Kremenetz is a town of considerable antiquity, dating from the eighth century. It was besieged by the Mongols in 1241 and 1245 and was the residence of Queen Bona Sforza from 1522 to 1527. Pop., 1912, 18,752, of whom one-third are Jews.

KREMENTCHUG, krēm'en-chöög'. The capital of a district of the same name, in the Government of Poltava, Russia, situated on the left bank of the Dnieper, 60 miles south-southwest of Poltava (Map: Russia, D 5). It has extensive manufactures of tobacco, agricultural machines, flour, carriages, trimmed lumber, etc. The town is a great mart for salt, tallow, brandy, and linseed, and is the centre of a rich agricultural district the produce of which is brought both by rail and river. In addition to its manufactures there is a flourishing trade in wheat, rye, barley, buckwheat, timber, and oats. The chief buildings are the cathedral, the arsenal, and the town hall. Pop., 1912 (including the town of Krukov, on the opposite bank of the Dnieper), 98,652, about 45 per cent of whom are Jews.

KREMER, krām'ēr, ALFRED, BARON VON (1828-89). An Austrian Orientalist and politician. He was born in Vienna, was educated there, and on the recommendation of Hammer-Purgstall the Vienna Academy of Sciences sent him to Syria and Egypt (1850). When he returned, he was appointed professor of modern Arabic in the Polytechnic Institute of Vienna. Soon afterward (1852) he became interpreter to the Austrian consulate in Egypt, and he was advanced to be Consul at Cairo (1859), at Galatz, Rumania (1862), and at Beirut (1870). In 1872 Kremer was made ministerial counselor, in 1876 was sent to Egypt as member of the Egyptian Debt Commission, and in 1880 was made Minister of Commerce, but held the position less than a year. His most important writings are: *Mittelsyrien und Damaskus* (1853); *Dwan des Abu-Nuwas* (1885); *Ägypten: Forschungen über Land und Volk* (1863); *Ueber die sudarabische Sage* (1866); *Geschichte der herrschenden Ideen des Islams* (1866); *Kulturgeschichtliche Streifzüge auf dem Gebiete des Islams* (1873); *Kulturgeschichte des Orients unter den Chalifen* (1875); *Beiträge zur arabischen Lexikographie* (1883-84). In Austrian politics Kremer was opposed to Slavic pretensions and to the clergy. Consult his *Die Nationalitätsidee und der Staat* (Vienna, 1885).

KREMER'S, krēm'ēr's, EDWARD (1865-). An American pharmacist. Born in Milwaukee, Wis., he was educated at the University of

Wisconsin (Ph.G., 1886; B.S., 1888), and at Göttingen (Ph.D., 1890). He returned to the University of Wisconsin, where he was instructor in pharmacy in 1890-92, professor of pharmaceutical chemistry after 1892, director of the course in pharmacy after 1899, and director of the Pharmaceutical Experiment Station after 1913. He was editor of the *Pharmaceutical Review* from 1896 to 1900, scientific editor of the *Midland Druggist and Pharmaceutical Review* in 1909-10, and coeditor of the *Standard National Dispensary* With Gildemeister and Hoffmann, he is author of *The Volatile Oils* (1900, 2d ed., 1913), a subject on which he became an authority.

KREM'LIN. A name of uncertain origin, used to designate the citadel in a Russian city. The best-known kremlin is that of Moscow (q.v.). The kremlins of Novgorod (q.v.) and Rostov (q.v.) are also of considerable historical interest.

KREM'NITZ (Hung. *Kormóczbánya*). A royal free town of the County of Bars, Hungary, 158 miles by rail north from Budapest (Map: Hungary, F 2). It is surrounded by walls and contains an old town hall, with valuable archives, a mint, an old castle, thirteenth and fourteenth century churches, and the house of Queen Mary. The town is famous for the gold and silver mines situated in the vicinity and still included among the richest in Hungary. All coinage in Hungary is done in the Kremnitz mint. It also has manufactures of paper, ochre, and stoneware. Pop., 1900, 4306 (with surrounding villages, 8906); 1910, 4515, mostly Roman Catholics.

KREM'NITZ, MITE (MABIE) (1854-). A German author, born at Greifswald and married to a physician who settled at Bucharest in 1875. Brought into friendly relations with Queen Elizabeth of Rumania (Carmen Sylva), she published, in collaboration with the latter, *Rumanische Dichtungen*, translations (3d ed., 1889), and, under the pseudonym Dito und Idem, the drama *Anna Boleyn* (1886), the novels *Aus zwei Welten* (7th ed., 1901) and *Astra* (3d ed., 1887), and the collections of stories *In der Irre* (4th ed., 1901) and *Rache und andre Novellen* (1889). Her other writings include: *Rumanische Skizzen* (1877); *Rumanische Märchen* (1882); *Carmen Sylva: Ein Lebensbild* (1882), the novels and tales *Ausgewanderte* (1890), *Elina* (1895, 2d ed., 1910); *Herr Baby* (1901); *Mann und Weib* (1902); *Am Hofe von Ragusa* (1902), *Fatum* (1903), *Eine Hilfloze* (1906), *Siegerin Zeit* (1907); *Die Geträuschten* (1909); *Laut Testament* (1910; 3d ed., 1911). Under the pseudonym George Allan she wrote *Fluch der Liebe* (1881) and other stories. In 1897 she removed to Berlin.

KREM'NITZ WHITE. See WHITE LEAD.

KREMS, krēms. A town of Lower Austria, situated at the confluence of the Krems with the Danube, 40 miles by rail northwest of Vienna (Map: Austria, D 2). It is adjacent to the town of Stein, located on the edge of the river. Krems has four churches, an old town hall with archives, a teachers' seminary, a Piarist college, a school of commerce, a vintners' school, a library, and a noteworthy city museum. It manufactures steel products, white lead, chocolate, mustard, machinery, small firearms, and deals also in wine and saffron. Pop., 1900, 12,657; 1910, 14,384.

KREMSIER, krēm'sér. A town of the

Crownland of Moravia, Austria, situated in a fertile region on the March, 20 miles south-southeast of Olmütz. It consists of the old walled town and a number of suburbs and contains a collegiate church, an archiepiscopal palace with a fine library of 24,000 volumes, several Gymnasias, a seminary for teachers, a denominational school, an agricultural school, and two conservatories of music. The chief manufactures are machinery, sugar, flour, and malt. There is trade in barley, fruit, and cattle. During the revolutionary troubles of 1848-49 the Austrian Reichstag met here for several months. Pop., 1900, 13,991, 1910, 16,528, mostly Roman Catholic Czechs.

KRES. See KRIS.

KRESTOVSKI, krës-töf'ski, V. The pseudonym of the Russian author Nadezhda Dmitrievna Khvoshtchinskaya (q.v.).

KRESTOVSKI, VSEVOLOD VLADIMIROVITCH (1840-95). A Russian historian and romancer, born in the Government of Kiev. He studied at the University of St. Petersburg, but left without graduating, to enter a cavalry regiment, whose history he wrote (1874). His literary work he gained the appointment of military historian and published an official account of the Russo-Turkish War (1879). Besides this and meritorious translations of Horace, Vergil, and Heine (appearing in periodicals after 1857), he produced a number of novels, in the manner of Eugène Sue, such as *Ne porvyni i ne poslednu* (Neither the First Time nor the Last) (1859), *The Sphinx* (1860), and *The Saint Petersburg Slums* (1867), written in imitation of Sue's *Mystères de Paris*. A complete edition of his works was published in 1873; a second edition in 1903.

KRETSCHMANN, krëch'mân, KARL FRIEDRICH (1738-1809). A German poet, born at Zittau. He studied law at Wittenberg and held legal offices in Zittau until 1797. His defense of the exploded theory of Germanic bards did much to make him ridiculous, but his epigrams, lyrics, and tales brought him a reputation for unusual felicity of diction. He was an imitator of Klopstock (q.v.) and Gerstenberg (q.v.). His works include *Der Gesang Rhingulphs des Barden* (1769); *Kleine Romane und Erzählungen* (1799-1800), and the comedies, *Die Familie Eichenkron*, *Die Belagerung*, and *Der alte böse General*. His complete works were published at Leipzig (1784-1805). Consult Knothe, K. F. *Kretschmann* (1858), and Ehrmann, *Die bardische Lyrik im achtzehnten Jahrhundert* (Halle, 1892).

KRETSCHMER, krëch'mër, EDMUND (1830-1908). A German musician, born at Ostritz in Saxony. He studied music with J. Otto and J. Schneider in Dresden, where in 1854 he became organist of the Catholic church and court organist in 1863. Two years later his *Gesterschlacht* won first prize at the first German Sängerefest (Dresden), and in 1868 a *Mass* won a prize at the international competition in Brussels. He founded and conducted several choral societies. His operas, *Die Folkunger* (1874), *Heinrich der Lowe* (both words and music, 1877), and *Schon Rotraut* (1887) were popular; and he also wrote masses, suites, etc.

KRETSCHMER, PAUL (1866-). A German philologist. He was born in Berlin; was educated in the University of Berlin, where he became docent in 1891; and became professor at Marburg in 1897 and at Vienna in

1899. In 1907 he undertook the editorship of *Glotta*, a periodical devoted to Greek and Latin linguistics. His great work was the valuable and critical *Einleitung in die Geschichte der griechischen Sprache* (1896). He also published: *Griechische Vasenschriften* (1894); *Entstehung der Koine* (1900); *Die heutige lesbische Dialekt* (1905).

KRETZER, krët'sër, MAX (1854-). A German novelist and dramatist. He was born at Posen, went to Berlin while he was young, worked in a factory, became a painter's assistant, and educated himself. While recovering from injuries suffered in an accident, he took up literature, continued his education as an autodidact, and made a reputation as a novelist of the Naturalistic school, especially with his Socialistic novel *Meister Timpe* (1888, 4th ed., 1908). His writings include: *Die beiden Genossen* (4th ed., 1900); *Sonderbare Schwärmer* (3d ed., 1903). *Drei Weser* (1885), *Im Sündenbabel* (1886, 2d ed., 1905); *Die Bergpredigt* (4th ed., 1901), *Der Millionenbauer* (15th ed., 1911; dramatized, 1891), *Gefährtes Haar* (1891); *Die Buchhalterin* (1893), *Der Bassgeiger* (last ed., 1895); *Die gute Tochter* (1895, 2d ed., 1900), *Der blinde Maler Ulrich* (1896); *Das Gesicht Christi* (1899; 6th ed., 1911); *Verbundene Augen* (1899), *Treibende Kräfte* (1903), *Familienklaven* (1904), *Das Armband* (1905) the plays *Bürgerlicher Tod* (1888); *Der Sohn der Frau* (1898), *Die Verderberin* (1900); *Der wandernde Taler* (1902); *Der Holzhandler* (1900; 20th ed., 1911); *Der Mann ohne Gewissen* (1905; 2d ed., 1907), *Das Kabarettferkel* (1907); *Der Mut zur Sünde* (1909; 2d ed., 1910); *Reue* (1910); *Waldemar Tempel* (1911); *Die flanken Knöpfe* (1912); *Stehe auf und Wandle* (1913) the epic, *Im Sturmwind des Sozialismus* (1883; 10th ed., 1907), in which there is a marked tendency towards Socialism: and verse, *Gedichte* (1914). In his earlier works, which give wonderful pictures of the life of the German laborer, he was successful; but when he undertook to rise to the heights of the artistic novel, he failed. He has been called the German Zola. Consult Kloss, *Max Kretzer* (1896).

KRETZSCHMAR, krëch'mär, AUGUST FERDINAND HERMANN (1848-). A German musician, born at Olbernhau. In 1871 he became teacher of harmony and the organ at the Leipzig Conservatory, of which he was a graduate. In 1887 he became musical director at the University of Leipzig. A good organist and composer, he was more famous as a critic. In 1904 he became professor of the history of music at the University of Berlin. Among his writings are *Führer durch den Konzertsaal* (3 vols., 1887) and the essays, *Brahms*, *Venetian Opera*, *Peter Cornelius*, and *Die deutsche Klaviermusik seit Schumann*.

KREUTZER, kroi'tsër, KONRADIN (1780-1849). A German composer, born in Baden. He was for two years a medical student at Freiburg, but abandoned his medical studies and devoted himself to music. As a boy, he had studied music with Rieger and Ernst Weihrach, and at 20 years of age he produced his first operetta, *Die lachertliche Werbung*. Ten years of study (part of the time under Albrechtsberger for counterpoint) followed, during which time he produced *Æoip in Phrygien* (1808) and *Jery und Bately* (1810). He now made several successful tours as a concert pianist and pro-

duced a number of dramatic works. In 1817 he was appointed kapellmeister to Prince Fürstenberg. In 1822 he became kapellmeister at the Kärntnerthor Theater at Vienna, which position he held for varying periods up to 1849, part of the time acting in a similar capacity at the Josephstädter Theater. In 1840 he went to Cologne, in 1846 he returned to the Kärntnerthor Theater, but left it soon to become kapellmeister at Riga, where he died. He was the composer of about 30 operas and one oratorio, besides church music, chamber music, pianoforte pieces, and songs, choruses, etc. Of his smaller compositions a few of his songs and some of his male choruses alone remain popular. Of his operas only two have retained the interest of his countrymen, *Das Nachtlager von Granada* (1834) and *Der Verschwendende* (1836).

KREUTZER, RODOLPHE (1766-1831). A famous French violinist and composer. He was born at Versailles and received his earliest education from his father, who was a musician in the Royal Chapel, and later he was placed under Stamitz. By the time he was 13 years of age he had successfully appeared in public, and before he was 21 had numerous compositions to his credit. In 1797 he made a tour through Italy, Germany, and Holland, after which he returned to Paris with an established reputation as a violinist. He obtained the patronage of Marie Antoinette and at the same time became violinist at the Opéra Comique. His next appointment was as solo violin at the Opéra in succession to Rode, soon followed by the position of *chef d'orchestre*, which he held for 14 years, when he was decorated with the Legion of Honor and became general director of music at the Opéra, a post which he retained till his retirement in 1826. He was a prolific composer, but his music, as a rule, was constructively weak, except in that written for his own instrument. The celebrated *Kreutzer Sonata* of Beethoven was dedicated to him. His works include about 40 dramatic works, two symphonies concertantes for two violins and for two violins and cellos, concertos, quartettes, trios, duets, five sets of sonatas for violin and bass, eight sets of studies for violin, and airs with variations. He collaborated with Rode and Baillot in the preparation of the celebrated violin method used in the Paris Conservatory. He died in Geneva. Consult H. Kling, *Rodolphe Kreutzer* (Brussels, 1898).

KREUTZER SONATA. A novel by Lyoff (Leo) Tolstoy (q.v.), published in 1890. It is an attack on the conventional marriage of contemporaneous society. At the time of its publication it was considered an attack on all marriage and consequently aroused bitter antagonism.

KREUZER, krois'tsēr (Ger., from *Kreuz*, cross, formerly stamped on it). A small coin, originally silver, but later copper, current until 1876 in south Germany, the sixtieth part of the gulden or florin (q.v.). The term also applies to a small coin of Austria, equal to two heller, or one-fiftieth of a krone, equivalent to four-tenths of a cent.

KREUZNACH, kroits'näg. A town and health resort in the Rhine Province, Prussia, on both sides of the Nahe, 9 miles south-southwest of Bingen (Map: Prussia, B 4). It has crooked, narrow streets and old-fashioned houses and is noted chiefly for its salt springs, discovered in 1478, which are very efficacious for skin diseases. The waters and salt of Kreuznach

are exported in considerable quantities, and the place is visited annually by about 8000 people. In the vicinity of the town are the ruins of a Roman castrum. Kreuznach has considerable manufactures of tobacco, leather, combs, and glass bottles. It has also a large trade in sparkling wine and grain. A factory has been built to extract radium from the waters. Its schools include a Gymnasium and a vintners' school. Pop., 1900, 21,334, 1910, 23,167. The town is mentioned as early as 819 as the Carolingian palatinate of Cruciaticum, and was once the capital of the County of Sponheim.

KRIEGE, krē'ge, JOHANNES (1859-). A German jurist, born in Luddinghausen. He entered the government service in 1880 and in 1886 was employed by the Foreign Office, becoming vice consul in Amsterdam. From 1889 to 1896 he held consular posts at Asunción and Serajevo, and then returned to the Berlin Foreign Office, where in 1911 he became director of the legal department. In 1900 and 1904 he was German delegate to The Hague conferences in private international law, in 1907 to The Hague Peace Conference, in 1908-09 to the London Conference on the laws of naval warfare, and in 1910 and 1912 to The Hague Conference on commercial law. In 1906 he became a member of the arbitration court at The Hague.

KRIEGSSPIEL, krēks'shpēl'. See WAR GAME.

KRIEHN, krēn, GEORGE (1868-). An American writer and lecturer on art. He was born at Lexington, Mo., graduated (1887) from William Jewell College, and, after five years of travel and study in Europe, received the degree of Ph.D. from Strassburg. He was instructor in history at Johns Hopkins University (1892-94) and assistant professor at Leland Stanford (1894-98), during several years lectured in Chicago on art topics and promoted the municipal art movement, and after 1901 resided in New York. In 1907 he became staff lecturer at the Woman's Art School of Cooper Union, and in 1912 he was appointed by Columbia University extension lecturer, at the Metropolitan Museum, on the history and appreciation of art. He wrote *The English Ruins in 1450* (1892), edited and translated Muther's *History of Painting* (2 vols., 1900), revised Ferguson's *History of Architecture* (2 vols., 1910), and had charge of the department of painting and sculpture in the first and second editions of the NEW INTERNATIONAL ENCYCLOPÆDIA.

KRIEKER, krēk'ēr. A gunners' name for one of the jacksnipe (*Pisobia maculata*).

KRIEMHILD, krēm'hilt. See NIBELUNGENLIED.

KRIMMITSCHAU, krim'it-shou. A town in Saxony. See CRIMMITSCHAU.

KRIS, krēs, KRES, CREESE, or CREASE (Malay, dagger). A Malay dagger, the universal weapon of the inhabitants of the Malayan Archipelago. It is made in many different forms—short or long, straight or crooked. The hilt and scabbard are often much ornamented; the hilt is sometimes of wood, sometimes of ivory. The blade is sometimes wavy (always with an uneven number of waves), sometimes the blade is long, straight, and very narrow. Men of all ranks wear this weapon; and those of high rank, when in full dress, sometimes carry three or four. In Java women sometimes wear it. See MALAYAN PEOPLES.

KRISHABER, kré'shà'bàr', MAURICE (1836-83). A French laryngologist, one of the founders of the modern treatment of diseases of the larynx. He was born in Fuketchegy, Hungary, and studied medicine at Vienna and Prague and at Paris, where he began to practice in 1864. He became a French citizen in 1872. He founded, with Isambert and Ladreit, the *Annales des Maladies de l'Oreille et du Larynx* (1875), devoted himself to nervous diseases, and wrote: *Des laryngopathies pendant les premières phases de la syphilis*, with Mauriac (1876); "Sur le cancer du larynx," in the *Annales* (1879); and, on "Krishaber's disease," *De la neuropathie cérébro-cardiaque* (1873).

KRISH'NA (Skt. *kṛṣṇa*, black). The eighth avatar or incarnation of the Hindu god Vishnu. See VISHNU.

KRISHNA. A river of India. See KISTNA.

KRISTIANIA, kris'tò-à-né-à. A city of Norway. See CHRISTIANIA.

KRISTIANSTAD. See CHRISTIANSTAD.

KRIZHANITCH, or **KRIZANIĆ**, kré'zhà-ních, YURI (JURI) or GEORGE (1617-c.1686). A Russian author, a promoter of Pan Slavism, and one of the earliest students of Slavic philology. He was a Serb (Croatian) by birth; was educated at Agram (his birthplace), Vienna, Bologna, and (1640) Rome, where he was trained for the work of converting the orthodox Slavs to Catholicism. This was apparently the germ in his mind of the idea of an ecclesiastical, political, and literary union of the Slavs. Russia seemed to him a promising field for this scheme, but his ideas seemed dangerous, and he was sent to Siberia. While there he wrote his Pan Slavonic grammar, *Grammatichno Iskazaniye*. In this work the Pan Slavic language is a jargon manufactured by the author, on the basis of Old Church Slavic, with admixtures of Russian and the south-Slavic languages, but the author shows no small scientific insight in his ability to see cognates. Even more important among his works and in the history of Pan Slavism was Krizhanitch's *Politius*, published by Bezsonov (*Russia in the Seventeenth Century*, 1859-60). Here he criticizes contemporary conditions in Russia and proposes remedies. His appeal to the Czar to head the Slavs in the fight against the Germans shows remarkable political foresight. He returned from Siberia in 1676, and after that date nothing is known of him. Consult Jagić, *Istoria slavianskoi filologii* (St. Petersburg, 1910).

KROEBER, krò'bér, ALFRED L(OUIS) (1876-). An American anthropologist, born at Hoboken, N. J. In 1896 he graduated from Columbia University (Ph.D., 1901). At the University of California he was instructor in 1901-06, assistant professor in 1906-11, associate professor in 1906-11, associate professor of anthropology after 1911, and curator of the Museum of Anthropology after 1908. He served also as curator of anthropology of the California Academy of Sciences in 1900 and 1903-11. He was one of the founders of the American Anthropological Association and in 1906 was president of the American Folk-Lore Society. He published many papers on the languages, myths, religion, and culture of various Indian tribes.

KROHG, kròk, CHRISTIAN (1852-). A Norwegian painter and author, born in Christiania. After his juridical examination at the University (1873), he went to Karlsruhe to study painting under Gussow, whom he followed

to Berlin (1875). After 1880 he studied in Paris, where for some time he was also teacher at the Academy of Fine Arts. In 1909 he became professor and director of the new Academy of Art in Christiania. A pronounced advocate of realism, Krohg was especially fond of portraying life at sea, as in his "Port the Helm" (1879, Christiania Gallery), "Hard-a-Lee" (1882, the Royal Castle, Christiania), "Norwegian Pilot" (1883, Dresden Gallery), "Eyewitnesses" (1885, Christiania Gallery), "Northwind" (1887), "Letter from Lofoten" (1887), "Leif Eriksson Discovers America" (1893, Christiania Gallery), "Looking for the Pilot" (1899), and "Man Overboard" (1910). Other subjects are "Dawn" (1880), "Albertine" (1886), "The Struggle for Existence" (1889, Christiania Gallery), and "17th-of-May Procession" (1899). He painted striking portraits of Johan Sverdrup, Carl Berner, Gerhard Munthe, Gerhard Gran, O. Thommessen, and August Strindberg (1893); but the portrait of his aunt (1893, Christiania Gallery) is considered his best. His numerous drawings are the collection "Kunstnere" (2 series, 1891-92), and the impressive illustrations to Ibsen's poem "Terje Viken." In Christiania Gallery he is represented with many drawings. He wrote *Foedrag om den bildende kunst som led i kulturudviklingen* (1886), *Ismaas dagreiser til og fra Paris* (1897), *Paa bycykel og jernbane* (1899), and the novels *Albertine* (1886, which was suppressed), *En duel* (1888), and *Dissonanser* (1906). His clever press interviews with well-known men he published as *12 af vore samtidige* (1895), *Egte bergensere* (1905), and *Omkring Mjosa* (1910).—ODA (or OTTILIA) KROHG, née LASSON (1860-), his wife, studied in Paris and at Malines under Gheertz. She painted "Sommernat ved Christiansfjorden" (1887, Christiania Gallery), "Lygten" (1891), and portraits of Gunnar Heiberg (1900, Stockholm Gallery) and Aasta Hansteen (Christiania Gallery) among many.

KROLL, kròl, WILHELM (1869-). A German classical scholar, born in Frankenstein, Silesia. He was educated at Breslau, Berlin, and Bonn, traveled in Italy and Sicily, became professor at Greifswald in 1899, at Münster in 1906, and at Breslau in 1913. He contributed to the *Rheinisches Museum*, to Bursian's *Jahresberichte*, to *Glotta*, and to Pauly-Wissowa's *Realencyklopadie*; edited (1910-13) the sixth edition of Teuffel's *Geschichte der römischen Literatur*; and wrote *Antiker Aberglaube* (1897), *Die Altertumswissenschaft in letzten Vierteljahrhundert* (1905), *Geschichte der klassischen Philologie* (1908).

KROMAYER, krò'mi'ér, JOHANNES (1859-). A German historian of ancient warfare. He was born in Stralsund and was educated in the universities of Jena and Strassburg. After teaching in secondary schools in Strassburg, Thann, and Metz, he traveled in Italy and Greece and led two scientific expeditions to study ancient battlefields—in Greece and Turkey in 1900 and in Italy and north Africa in 1907. He was appointed professor of ancient history at Czernowitz in 1901 and at Leipzig in 1913. His published works include *Antike Schlachtfelder* (3 vols., 1902, 1907, 1911) and *Roms Kampf um die Weltherrschaft* (1912).

KRONBERG, kròn'bàr-y', (JOHAN) JULIUS (FERDINAND) (1850-). A Swedish painter, born at Karlskrona. He entered the academy at

Stockholm at the age of 13, and in 1873 a government scholarship enabled him to continue his studies in Düsseldorf, Paris, Munich, and Rome. In 1875 he sprang suddenly into prominence with "Nymphs and Fauns" (National Museum, Stockholm), a composition of great coloristic charm in the manner of Makart. His other works include "Amorettes" (1878) and "David and Saul" (1885), both in the National Museum, Stockholm; "Death of Cleopatra" (1883); "Queen of Sheba" (1888). He was elected a member of the Stockholm Academy in 1880, and he was professor from 1885 to 1898.

KRONBERG, Louis (1872-). An American figure painter. He was born in Boston, studied at the Boston Museum School, at the Art Students' League, New York, and at the Académie Julian under Laurens and Constant. Establishing himself in Boston, he was appointed instructor in the portrait class of the Copley Society, Boston. Among his best-known works are "Behind the Footlights" (Pennsylvania Academy, Philadelphia) and "The Pink Sash" (Metropolitan Museum, New York). Kronberg is represented also in the Gardner collection, Boston, and in the museums of Boston and Indianapolis. His work shows the influence of his French training—his composition is good and his color soft and harmonious, yet with decided contrasts.

KRONECKER, krō'nēk-ēr, LFOPOLD (1823-91). A German mathematician, born at Liegnitz. He studied at the universities of Berlin, Bonn, and Breslau, and received his doctor's degree at Berlin in 1845. In 1861 he became a member of the Academy of Sciences at Berlin, and the next year he began giving lectures on mathematics in the university. In 1883 he was made professor of mathematics. Kronecker was one of the greatest of German algebraists. He gave a simpler treatment of cyclotomic equations than Gauss, improved the proof of Abel for the insolubility of the general algebraic equation of degree higher than the fourth, and made a thorough investigation of Abelian equations. He also worked out the arithmetical and algebraic problems involved in the theory of elliptic functions and materially improved the general theory. He attempted to do away with all special ideas of number, such as fractions and irrational numbers, and to construct a scientific arithmetic on the basis of the one concept "number," *die Anzahl*. This problem was later elaborated by Klein. Kronecker's most important works are *Grundzüge einer arithmetischen Theorie der algebraischen Grossen* (1882), *Ueber den Zahlbegriff* (1887); *Vorlesungen*, edited by Hensel and Netto, vol. 1 (1894). His *Werke*, edited by Hensel, were published at Leipzig in 1895-99. He assisted also in editing Crelle's *Journal für Mathematik*. Many of his published articles are found in the *Monatsberichte* of the Academy of Berlin, in the *Comptes Rendus* of the Academy of Sciences of Paris, and in the *Annales de l'École Normale Supérieure* of Paris. His correspondence with Dirichlet appeared in the *Göttingische gelehrte Anzeigen* (1885). Consult: Royal Society of London, *Catalogue of Scientific Papers*, vols. iii, x (London, 1869, 1894), and Frobenius, "Gedächtnisrede auf Leopold Kronecker," in *Königliche Preussische Akademie der Wissenschaften, Abhandlungen* (Berlin, 1893).

KRONENBERG, krō'n-en-bēr-k. A town in the Rhine Province, Prussia, near the river

Wupper, about 6 miles south-southwest of Elberfeld. It has a fine town hall, and iron and steel works. Pop., 1900, 10,220; 1910, 12,869.

KRONES, krō'nēs, FRANZ, VON MARCHLAND (1835-1902). An Austrian historian, born at Ungarisch-Ostrau in Moravia and educated at Vienna. In 1865 he was appointed professor of Austrian history in the University of Graz. His books include: *Die österreichischen, böhmischen und ungarischen Länder 1437-1526* (1864); *Zur Geschichte Ungarns im Zeitalter Franz Rákóczy's II* (1870); *Ungarn unter Maria Theresia und Joseph II.* (1870); *Zur Geschichte Oesterreichs im Zeitalter der französischen Kriege und der Restauration* (1886); *Aus Oesterreichs stillen und bewegten Tagen 1810-12 und 1813-15* (1892); *Verfassung und Verwaltung der Mark und des Herzogtums Steier von ihren Anfängen bis zur Herrschaft der Habsburger* (1897); *Oesterreichische Geschichte bis 1526* (1899); *1526 bis zur Gegenwart* (1900).

KRONES, THERESE (1801-30). An Austrian actress of much ability and grace in comic parts. She was born at Freudenthal of parents who were engaged in the theatrical business. After several provincial tours she appeared at the Leopoldstädter Theater in Vienna, where she played with Raimund, who greatly influenced her technique. In 1827 she retired from the stage for a time, being unjustly accused of complicity in the murder of Professor Blank by Jaroszyński. She wrote several plays—*Sylphide* and *Nebelgeist* among them—and is the central figure in a novel by Bäuerle (1854-55) and in a melodrama by Haffner (1861).

KRONSTADT, krō'n'stāt, or **CRONSTADT** (Hung. *Brassó*). A royal free town of the county of the same name, Transylvania, Hungary, picturesquely surrounded on three sides by the Transylvanian Alps at an altitude of 1940 feet. It is a short distance from the Rumanian frontier, 60 miles east-southeast of Hermanstadt, and is the largest and most important industrial and commercial town in Transylvania (Map: Hungary, J 4). The inner town is surrounded by a part of the old fortifications and promenades and is commanded by the citadel of Schossberg, erected in 1553 to ward off the attacks of the Wallachs. There are also the fourteenth-century Gothic Protestant church (known as the "black church" on account of its smoke-stained walls, the result of the great fire of 1689), with a modern carved altar, a fine altarpiece, and one of the largest organs in the Kingdom; the old church of St. Bartholomew; and the town hall, dating from 1420. Not far from the latter stands the large Kaufhaus, erected in 1545. The Blumenau district is given to manufactures, while the upper suburb is inhabited by Rumanians. Kronstadt has the Honterus (Protestant) Gymnasium, with a museum of natural history and archaeology and a library founded in 1544; a seminary for teachers, a Rumanian Gymnasium, commercial academy, and a theatre. Chiefly important are its products of wood and metal; but it manufactures cloth, leather, sugar, stoneware, paper, blankets, Portland cement, and candles. There are also many small industries. Pop., 1900, 36,646; 1910, 41,111. Magyars, Wallachs (Rumanians), and Germans, mostly Protestants. Kronstadt is said to have been colonized in the thirteenth century by the Teutonic Knights. It was destroyed by the Tatars and the Turks in the

fifteenth century and became in the sixteenth century the centre of Protestantism in Transylvania, Johannes Honterus, "the Apostle of Transylvania," having preached here.

KRONSTADT, krón'shtát. A strong sea fortress and port of Russia, situated on the island of Kotlin, in the eastern part of the Gulf of Finland, 31 miles west of St. Petersburg (Map: Russia, C 2). It is regularly built and very strongly fortified by walls, earthworks, forts, and batteries. It has three harbors, including a commercial harbor, accommodating 1000 vessels. Prior to the construction of the sea canal from Kronstadt to St. Petersburg sea-going vessels usually unloaded at Kronstadt, and the freight was carried to St. Petersburg in small steamers. The completion of the canal made the port of St. Petersburg accessible to large vessels, with the result that Kronstadt greatly declined in commercial importance. The town has numerous public buildings, being the seat of the Admiralty and an important naval station. The house which Peter the Great occupied in 1710 is one of the sights of the town, and some interesting specimens of the workmanship of the Czar carpenter are found in the churches. The educational institutions comprise two Gymnasias, a naval and a marine engineer's school, and a school for sailors. The city also contains a naval and a civil hospital and the British seaman's hospital, supported by a tax on British shipping. The industries of the town are chiefly in connection with the government navy yards, but there are also machine works, saw mills, etc. The sea commerce of Kronstadt is still very important, and the port is connected by steam with Riga, Stockholm, Stettin, Lübeck, and Hull. During a part of the winter, during which the port is icebound on the average of 150 days each year, the transportation of freight from Kronstadt to St. Petersburg is effected by means of a railway line built on the ice. Kronstadt was founded by Peter the Great in 1710. It forms a separate administrative division under a military governor, who is also the commander of the port. Pop., 1911, 68,273

KROPOTKIN, PETER ALEXEYEVITCH, PRINCE (1842-). A Russian geographer and anarchist, born at Moscow. He became a member of the corps of *pages de chambre*—a privilege much sought after by the nobility because of the intimate relation of the pages with the Imperial family—and received an excellent education in physical and military science. It was the ambition of his father that Kropotkin should devote his life to service at the court; but the life at St. Petersburg repelled him, and in 1862 he elected service in a Cossack regiment which was to be stationed in the Amur region in Siberia. There he engaged in several important administrative duties and made explorations in parts of Manchuria, then wholly unknown to geographical science. A study of the economic conditions of the Amur settlements led him to entertain schemes for important reforms; but the bureaucratic administration rendered any reform impossible, even thwarting improvements initiated by the settlers. This experience first prepared him for anarchism. In 1867 he returned to St. Petersburg and entered the university. His explorations in Asia had convinced him that the maps of that continent were based on an erroneous principle. After two years of work he published a new hypothesis,

which has since been adopted by most cartographers. In a geological expedition to Finland Kropotkin discovered that all of northern Europe was once covered by an icecap, an opinion still combated at this date by high authorities, though urged by Venetz (1829), Agassiz (1840), Ramsay (1864), and Torell still earlier. Observation of the economic conditions of the Finnish peasants inspired in him a feeling that natural science avails little so long as the social problem remains unsolved. In 1872 he visited western Europe and spent some months in Switzerland, at that time the centre of the propaganda of the International Workingmen's Association. Kropotkin joined the more conservative collectivistic wing of the party, but soon went over to the Bakunists, or Anarchists. Returning to Russia, he found the nihilistic movement well under way and joined the Circle Tchaikovsky, a revolutionary society with branches throughout Russia. For two years he was busily engaged in carrying on an anarchistic propaganda, devoting a part of his time, however, to geographical science. In 1874 he was arrested and consigned to the fortress of Peter and Paul at St. Petersburg, where by special favor he was permitted to elaborate the results of his explorations in Finland. After two years of imprisonment he escaped to England and in 1877 went to Switzerland, where he again became actively engaged in the anarchistic movement. In 1879 he began to publish at Geneva *Le Révolte*, the organ of his party. After the assassination of Alexander II he was expelled from Switzerland and after a brief stay in England settled in Thonon, France, where he continued to publish *Le Révolte*. He was arrested in 1883 for alleged complicity in anarchistic plots at Lyons and was sentenced to five years' imprisonment. In 1886 he was set free and went to England, where he took an active part in the socialistic movement of that year. Since that time he has lived in England, devoting himself to writing and lecturing in defense of anarchism. He visited the United States in 1900.

While a believer in revolution as a necessary means to social reform, Kropotkin has always displayed a disinclination for violent measures. His ideal is a society of small communities of equals, federated for the purpose of securing the greatest possible sum of well-being, with full and free scope for every individual initiative. Government and leadership have no place in his scheme of social organization. He recognizes that it is impossible for any man to conceive the method of operation of such a society, but trusts to the collective wisdom of the masses to solve the problems involved.

Kropotkin's writings include: *Paroles d'un révolté* (1884); *In Russian and French Prisons* (1886); *La conquête du pain* (1888; Eng. trans., *The Conquest of Bread*, 1906, new ed., 1913); *L'Anarchie, sa philosophie, son idéal* (1896; Eng. trans., 1897); *The State: Its Part in History* (1898); *Fields, Factories, and Workshops* (1899; 8th ed., 1912); *Mutual Aid, a Factor in Evolution* (1902; 2d ed., 1903); *Modern Science and Anarchism* (1903; rev. ed., 1912); *The Orography of Asia*, with maps (1904); *The Desiccation of Asia* (1904); *Ideals and Realities in Russian Literature* (1905); *The Great French Revolution, 1789-1793* (1908); *Terror in Russia* (1909); *La science moderne et l'anarchie* (1912). Consult Kropotkin's own *Memoirs of a Revolutionist*

(Boston, 1899; 3d ed., 1908; French, German, Dutch, Swedish, Danish, Spanish, Italian, Russian trans.); Emil Daniels, "Der Anarchist Fürst Kropotkin," in *Preussische Jahrbuch*, vol. cii (Berlin, 1900); Fritz Havelka, "Fürst Peter Kropotkin und der Anarchismus," in *Zeitschrift für Volkswirtschaft, Sozialpolitik, und Verwaltung*, vol. x (Vienna, 1901); Federico de Roberto, "Pietro Kropotkin," in *Nuova Antologia*, vol. ccii (5th series, Rome, 1905); Victor Robinson, *Comrade Kropotkin* (New York, 1908).

KROTOSCHIN, krò'tò-shên. A town in the Prussian Province of Posen, 43 miles northeast of Breslau (Map Prussia, G 3). Its manufactures include machinery, iron, bricks, trimmed lumber, dairy products, and beer. Pop., 1910, 13,064.

KRÖYER, krëy'ër, PETER SEVERIN (1851-1909). A Danish genre and portrait painter, born at Stavanger, Norway. He was a pupil of the Copenhagen Academy and afterward studied in Paris under Bonnat. He traveled extensively in Europe, especially in Italy, and his "The Italian Village Hatmakers" is in the Copenhagen Gallery. It is a model of vigorous realistic work. After his return to Denmark he devoted himself largely to painting life at Skagen, subjects such as "Fishermen Setting out by Night," "Artist's Breakfast at Skagen," "A Summer Day upon the Beach at Skagen," and "The Musical Soirée." His most notable portrait studies are "The Committee for the French Section of the Copenhagen Exhibition of 1888," and "A Meeting of the Society of the Sciences," in which, as in all his interiors, he shows great skill in the handling many figures and in the management of light.

KROZET (krò-zä') ISLANDS. A volcanic archipelago in the Indian Ocean. See CROZET ISLANDS.

KRU, kröö, or **KRUMEN**, kröö'men. A tribe of negroes living on the coasts of Liberia and French Guinea in West Africa. The Kru are among the few African tribes that are skilled in seafaring. They are noted as boat builders and as hardy sailors and are valued as crews for men-of-war and merchant ships. They are also the best factory workers of all the negroes, and one may depend on their obedience, faithfulness, and courage. Their fairness in bargain and readiness to enter into engagements have given them a great part of the trade of their country. Consult Büttikofer, *Reisebilder aus Liberia*, vol. i (Leyden, 1890).

KRÜDENER, krü'den-ër; BARBARA JULIANE, BARONESS VON (1764-1824). A novelist of the Romantic school and one of the most prominent apostles of Pietism during the early years of the nineteenth century. She was born at Riga, Nov. 21, 1764, the daughter of Privy Councillor von Vietinghoff, one of the richest landowners of Livonia. In 1783 she married Baron Burkhard von Krüdener, a widower of 50 and a rising diplomat, at this time attached to the Russian Embassy at Paris. In 1784 the Baron became Ambassador to Venice and two years later was transferred to Copenhagen. The young wife devoted herself to her husband with an excess of tenderness which proceeded from her absence of love. Bad health and ennui sent her in 1789 to France, where she lived in Paris, Baréges, and Montpellier, surrounded by a little court of sentimental worshipers, chief among

whom was Bernardin de Saint-Pierre, author of *Paul and Virginia*. In France, too, she fell in love with a young officer in the Hussars, Charles Louis de Frégeville, and with two brief intervals lived apart from her husband, and in 1791 she returned to her husband, confessed her guilt, and demanded her freedom. The honor of the name made this impossible, but, except for a temporary reconciliation in 1793 and a subsequent spasmodic return to her marital duties, the two lived apart till the Baron's death, in 1802. For the Baroness this was a period of gay frivolity passed in Germany and Switzerland. In 1801 she met Madame de Staël at Coppet and in December accompanied her to Paris, where her wonderful powers were allowed full play. In 1803 she published *Valérie*, a novel of feeling, based on the love episode with her husband's secretary. It was marked by charm of style and a delicacy of sentiment bordering on mysticism. The author of *Valérie* took her place among the literary gods of Paris.

In 1804 she returned to Riga, and there in the following year occurred her remarkable "conversion" to the teachings of the Moravians. She speedily began to preach the worth of unworldliness, self-surrender to the will of God, and a return to the simplicity of Christ's teaching. At Königsberg, in 1807, Queen Louise of Prussia fell under her influence. From Königsberg she traversed Germany to Karlsruhe, where she associated much with Jung-Stilling (q.v.) and became thoroughly steeped in Pietism and a convert to dreams of the millennium. For nearly eight years she continued her missionary work in Germany, Switzerland, and Alsace, till in May, 1815, at Heilbronn in Württemberg, she met the Emperor Alexander of Russia, then in the full flush of his glory as leader of the victorious allies against Napoleon. The Emperor fell immediately under her spell. He prayed and read the Scriptures with her and took her with him to Paris, where her house became the centre of a Pietistic movement as intense as it was short-lived. Her influence over Alexander continued unabated, and as the Emperor's "conscience" she was instrumental in furthering the formation of the Holy Alliance (q.v.), though she was not its originator, as is frequently stated. With the Czar's departure for Russia her downfall began. She removed to Basel, where her preaching aroused the hostility of the authorities and led to her expulsion. Followed by a mob of fanatics and beggars, she wandered through northern Switzerland without finding a place of refuge, yet steadfastly pursuing her mission. In 1817 she set out for her home at Kosse. There she remained till 1820, when she went to St. Petersburg. With Princess Anna Golitzyn she became the leader of a religious revival which spread rapidly among the polite classes and assumed such dimensions as to arouse the displeasure of the Czar, who in addition was angered by Madame Krüdener's intercessions in behalf of the Greeks, who were then engaged in their struggle for independence against the Turks. She was compelled to leave the capital and returned to Kosse; but a dangerous disease brought on by her ascetic practices necessitated her departure for the Crimea, where she died, at Karasu-Bazar, on Christmas morning, 1824. Consult: Ford, *Life and Letters of Madame Krüdener* (London, 1893), containing a bibliography; F. Muhlenbeck, *Etude sur*

les Origines de la Sainte-Alliance (Paris, 1888); Turquan, *La baronne de Krüdener* (ib., 1900).

KRUG, קרוג, WILHELM TRAUOGT (1770-1842). A German philosophical writer, born at Radis (Prussia). He studied at Wittenberg as a pupil of Reinhard and Jehnichen and at Jena under Reinhold, and from 1801 to 1804 was professor of philosophy in the University of Frankfurt-on-the-Oder. In 1804 he succeeded Kant as professor of logic and metaphysics at Königsberg and from 1809 until his retirement in 1834 held the chair of philosophy at Leipzig. He fought in the War of Liberation (1813-14) as captain of mounted chasseurs. His *Handbuch der Philosophie und philosophischen Litteratur* (3d ed., 1828) gives in concise form his philosophical system, a lengthy exposition of which was developed in the *Fundamentalphilosophie* (3d ed., 1827), the *System der theoretischen Philosophie* (2 vols., 3d ed., 1830), and the *System der praktischen Philosophie* (2d ed., 1829-38). This system has for its basic idea a transcendental synthesis of being and knowledge, i.e., synthesis original and therefore unexplainable, in accordance with which the understanding recognizes the existence of the subject and recognizes also the existence of the external world and of a connection between the two. Thus his system is seen to be an attempted harmony of idealism and realism. Consult the autobiography *Meine Lebensreise* (2d ed., Leipzig, 1842).

KRÜGER, קרן'גער, ALBERT (1858-). A German etcher and engraver. He was born at Stettin, studied at the Berlin Academy, and began as an illustrator. He then took up etching and copperplate engraving under Jacoby and later devoted himself chiefly to chromoxylography and mezzotint. He did much excellent work for the Berlin Gallery and for the *Zeitschrift für bildende Kunst* and other art periodicals. His original etchings show individuality, and among his reproductions of old masters are plates after Rembrandt, Durer, Van Eyck, and Botticelli.

KRÜGER, GUSTAV (1862-). A German Church historian, born in Bremen. He was educated in the universities of Heidelberg, Jena, Giessen, and Göttingen, and became professor (and in 1902-03 was rector) at Giessen. His special field was early Church history and dogma, and among his important works are: *Lucifer von Calaris und das Schisma der Luciferianer* (1886); *Justins Apologien* (1891; 3d ed., 1904); *Augustin de catechizandis rudibus* (1893; 2d ed., 1909); *Geschichte der Altchristlichen Literatur in den ersten drei Jahrhunderten* (1895; 2d ed., 1897); *Kritik und Ueberlieferung auf dem Gebiet der Erforschung des Urchristentums* (1903); *Dreieinigkeit und Gottmenschheit* (1905); *Handbuch der Kirchengeschichte* (1909-13).

KRÜGER, KARL WILHELM (1796-1874). A German Hellenist, born at Gross-Nossin in Pomerania and educated at Halle (1816-20). From 1820 to 1838 he taught in schools at Zerbst, Bernburg, and Berlin. His writings include: *Griechische Sprachlehre für Schulen* (1842-56; 6th ed., 1892); *Historisch-philologische Studien* (1836-51); *Kritische Analekten* (1863-74); and editions of Arrian, Xenophon, Thucydides, and Herodotus. In his editions he showed marked power in grammatical exegesis. Consult Pökel, *Krügers Lebensabriss* (Leipzig,

1885), and Sandys, *A History of Classical Scholarship*, vol. iii (Cambridge, 1908).

KRÜGER, PAUL (1840-). A German jurist. He was born in Berlin, where he studied jurisprudence. In 1863 he began to lecture on Roman law at the university of his native town. After 1888 he was professor of the same subject at Bonn. His contributions to law literature include: *Prozessuale Konsumtion und Rechtskraft des Erkenntnisses* (1864); *Kritik des Justinianischen Codex* (1867); *Kritische Versuche im Gebiete des römischen Rechts* (1870); *Geschichte der Quellen und Litteratur des römischen Rechts* (1888; 2d ed., 1912). The last named was translated into French by J. Brissaud (1893). Especially important are his critical edition of the *Codex Justinianus* (1877), his *Justinianische Institutionen* (1867, 3d ed., 1908), and his *Corpus Juris Civilis* (vol. i, with Mommsen, 1868-72, 12th ed., 1911; vol. ii, 1874, 7th ed., 1900; vol. iii, 1880-91).

KRUGER, קרוג'גער, STEPHANUS JOHANNES PAULUS (1825-1904). President of the South African Republic (1883-1900). He was born in Colesberg, Cape Colony, Oct. 10, 1825. His ancestor, Jacob Kruger, went from Berlin in the Dutch East India Company's service in 1713, at the time when the foundations of many of the leading Boer families were being laid by immigration. In 1836 young Paul shared with his family the hardships of the great trek, when the blunders of the British colonial administration made enemies of the leading Boers of Cape Colony and drove them to a self-imposed exile which resulted in the founding of the new South African Republic beyond the Vaal. (See BOER.) Paul's mother, who was a Steyn, died in his early youth and his father in 1852. The young man grew to manhood amid the hardships which attended the winning of the country from the savage natives. He was distinguished for strength and personal prowess; but his education was limited, being confined to writing and reading, and the latter mainly to the Old Testament. The fact that Kruger was brought up in the beliefs of the narrowest and most bigoted branch of the Dutch Reformed church in the Transvaal explains much of his later political attitudes and relieves him of the charge of hypocrisy sometimes preferred by his adversaries. His early and deep conviction that he enjoyed the special favor of God secured him later the ardent support of his sect. After the Sand River Convention (1852), when the conflict arose between two parties among the Boers themselves, Kruger cast his lot with the Nationalist and orthodox party of Pretorius, and in the collision of the Pretorius party with the Orange Free State in 1857 he was one of the negotiators on the part of the former of the treaty which averted hostilities and secured to the Transvaal the recognition of independence from Great Britain. He then held the rank of commandant in the Rustenburg District. In the rivalry between the Dutch Reformed and Separatist Reformed churches he was a strong supporter of the latter as the more orthodox. He headed the movement to overthrow Schoeman, who misused his powers as acting President in 1860. Elected commandant general of the reorganized Republic in 1863, Kruger put down the civil strife which had been the curse of the Boers from the time they obtained their independence, arranged peace with the Zulus, and

defeated the Basutos. He was Vice President of the Republic under President Burgers. In 1877, when the failure of the Burgers policy and the skillful diplomacy of Sir Theophilus Shepstone had brought the Republic to the point of a grudging reception of annexation, Kruger became the head of the protesting Nationalist party, although he held office for eight months under the annexation government. He was the principal member of the deputations which protested against annexation both to the Cape and to the English government. Events rapidly moved towards armed resistance to the British authority, as the promises made in 1877 were not kept, and in 1880 the National Committee reorganized the government, with Kruger in his old position of Vice President. He was an active participant in the war which followed, and negotiated together with General Joubert (q.v.) and Pretorius after the defeat of the English at Majuba Hill, the preliminaries for the Pretoria Convention of 1881 and succeeded in securing still more advantageous conditions for his country through a visit to England in 1883. The Boers having won back their independence, though under a reserved British suzerainty, elected Kruger President in 1883 over Joubert by 3431 votes to 1171. He was reelected in 1888, 1893, and 1898. In the South African Republic, after he became President, Kruger was more and more a power, his influence over his own people being almost boundless. Friction with the British government increased through the development of the Rand gold mines (which were discovered in 1886), the unmeasured ambitions of the British South Africa Company, and the discontent of the Uitlanders, who had become an important factor in the Transvaal population, and whose influence Kruger tried to counteract through favoring the Hollander party. His policy during this period has been criticized, especially his modification of the franchise laws in favor of the Dutch element; but English jealousy had created difficulties for his administration and had frustrated his attempt to secure a seaport for his country. When the Jameson raid, at the close of 1895, produced a crisis, President Kruger showed his moderation and diplomacy in the management of the difficult details of that case. Through his influence Dr. Jameson and his associates were turned over to the English government for trial in the English courts against the wishes of the more hot-headed Boers. The evident intention of the British Colonial Office to force the Republic to submission, and the refusal, determined or obstinate, as one may look at it, of President Kruger to yield anything to British suzerainty, brought on in 1899 the war of which Kruger had said that the submission of his people would be purchased at "a price that would stagger humanity." In preparation for the struggle which he had long regarded as inevitable, Kruger had put the Transvaal into an excellent defensive state by the purchase of large quantities of arms and ammunition, being ably assisted in his preparation by the commandant general of the forces "Slim Piet" Joubert (q.v.). During the first period of the war President Kruger remained in Pretoria, where he maintained order by the sheer force of his personality. After the fall of Pretoria (June 5, 1900), President Kruger fled into Portuguese territory, and on October 19 sailed on the Dutch battleship *Gelderland* from Lourenço Marques

for Europe in the hope of securing foreign aid or intervention. He was received with enthusiasm in France, and had an interview with President Loubet, but failed to obtain an audience with the German Emperor and the Russian Czar and took up his residence in the Netherlands, making his home in Utrecht and The Hague. His efforts to secure foreign intervention failed, but he continued to exhort the Boers to stand fast to the last. Kruger first married a Miss Du Plessis, whose family is a branch of that to which Cardinal Richelieu belonged. His second wife was a niece of the first Mrs. Kruger. They had several children.

Bibliography. The most ambitious biography is Van Dordt, *Paul Kruger und die Entstehung der südafrikanischen Republik*, translated into German by Kohlschmidt (2 vols., Basel, 1900), written from a very friendly standpoint; in English the biography by Statham, *Paul Kruger and his Times* (London, 1898), is too one-sided to be reliable, though it throws much light on South African history from the Boer side; Paul Kruger, *Memoirs*, translated by A. Teixeira de Mattos (New York, 1902). On the other side the following works are mere political contributions to the material for the history of the period: Glückstein, *Queen or President? An Indictment of Paul Kruger* (London, 1900); Scohle and Abercrombie, *The Rise and Fall of Krugerism* (New York, 1900). See TRANSVAAL; SOUTH AFRICAN WAR.

KRUMBACHER, krūm'bāg-ēr, KARL (1856-1909). A distinguished German Byzantine scholar, born at Kurnach in Bavaria. He studied at the universities of Leipzig and Munich, was professor at Leipzig for about 15 years after 1892, and at the time of his death was professor at Munich. He is best known for his *Geschichte der byzantinischen Literatur* (2d ed., 1897), which covers the period from Justinian to the fall of Constantinople, a monument of wide and sound learning, with important bibliographical material. He was also prominent as founder and editor of the *Byzantinische Zeitschrift* and as editor of the *Byzantinisches Archiv*. Among his other works are: *Ein neuer Codex der Grammatik des Dositheus* (1884); *Griechische Reise* (1886), the outcome of extensive travels, *Beiträge zu einer Geschichte der griechischen Sprache* (1885-89); *Mittelgriechische Sprichwörter* (1893); *Studien zu Romanos* (1898); *Die Moskauer Sammlung mittelgriechischer Sprichwörter* (1900); *Das Problem der neugriechischen Sprache* (1902); "Die Griechische Literatur des Mittelalters," in *Die griechische und lateinische Literatur und Sprache*, by various hands (3d ed., 1912); *Populäre Aufsätze* (1909).

KRUMMEN. See KRU.

KRUMMACHER, krūm'māg-ēr, FRIEDRICH ADOLF (1767-1845). A German theologian and a writer of devotional poetry and prose, born at Tecklenburg. He studied theology at Lingen and Halle, taught in the high school at Hamm, was head of the high school at Mörs, and became, in 1800, professor of theology at Duisburg. In 1807 he returned to the ministry, became pastor at Kettwig, and in 1812 was called to Bernburg as general superintendent and chief court preacher. He accepted a call to Bremen in 1824 and retired in 1843. His *Parabeln* (9th ed., 1876) soon became a religious classic. They were first translated into English in 1825. Consult Maria Krummacher, *Unser Grossvater*

(3d ed., Bielefeld, 1891).—His son **FRIEDRICH WILHELM** (1796-1868) became court chaplain (1853) at Potsdam. He was a preacher of great eloquence, but a reactionary theologian. Many of his works have found favor in translations in England. Among them are: *Elias der Thisbiter* (6th ed., with author's life, 1903); *Elisa* (1839-42); *Passionsbuch* (1856). *Salomo und Sulamith* (1827; 9th ed., 1875) was also published. Consult his *Selbstbiographie* (Berlin, 1891).

KRÜMMEL, krūm'mel, Otto (1854-1912). A German geographer, best known for his work in oceanography. He was born at Exin and was educated at Berlin and at Göttingen, where he was appointed docent of geography. He accepted a chair as professor at Kiel in 1883. In 1889 he accompanied the Plankton expedition. In 1911 he became professor of geography at Marburg. His publications include: *Die aquatorialen Meeresströmungen des atlantischen Oceans* (1877); *Der Ocean* (1886; 2d ed, 1902); *Handbuch der Oceanographie* (1887; 2d ed., vol. i, 1907, vol. ii, 1911); *Die Reisebeschreibung der Planktonexpedition* (1892).

KRUMMHOLZ, krūm'hōlts (gnarled wood). A term which has long been used by German botanists for the gnarled and spreading form of the mountain pine (*Pinus montana*), and which has now become, even in English, a general term for the low scrubby growth of woody plants above the timber on mountains. Good examples of this habit are seen in several spruces and pines, notably in *Pinus flexilis* in the Rocky Mountains and in the mountain hemlock (*Tsuga mertensiana*) on many of the mountains from Oregon to Alaska. These species form large trees at lower altitudes, but above the limit of tree growth the trunks become low and prostrate, the number of branches multiplies, they bend close to the ground and twist and turn in all directions. This peculiar habit of growth is probably due to the high transpiration caused by exposure to the high winds and intense sunlight of alpine regions, together with the low temperature of the soil that makes absorption difficult. See also **ALPINE PLANT**; **MOUNTAIN PLANTS**.

KRUPP, krup, ALFRED (1812-87). Inventor, metallurgist, and manufacturer. He was the son and successor of Friedrich Krupp, the founder of the steelworks at Essen, and was born at Essen, Prussia. His brother Hermann was associated with him until 1848, when Alfred assumed entire control, and by persistent study and great diligence continued his father's efforts to improve the manufacture of steel. His exhibit at London in 1851 first drew the attention of the world to him, and in 1852 the successful invention of a method of manufacturing weldless railway tires enabled him to enlarge his establishment. His breech-loading rifle and other cannon were adopted by the Prussian army in 1861, and the War of 1870-71 established its superiority. His factory soon became known for the heavy ordnance and armor plate which were constructed there not only for Germany, but for other European nations except France, for whom the Krupps have never manufactured munitions of war. He died July 14, 1887. Consult: Bildeker, *Alfred Krupp* (Essen, 1888); in English, Niemeyer, *Alfred Krupp*, translated by Michaelis (New York, 1888); Frobenius, *Alfred Krupp* (Dresden, 1898). See **ARMOR PLATE**; **ORDNANCE**.

KRUPP, FRIEDRICH (1787-1826). Iron-master and founder of the famous Krupp Works. He was born at Essen, Rhenish Prussia, and after the death of his father he was brought up by his grandmother, who had, in 1800, purchased the Sterkrade Works. Here Friedrich endeavored to make cast steel, the secret of which was carefully guarded in England. With Gottlob Jacobs, an engineer, Krupp made his first experiments at the Sterkrade Works and after the sale of the plant in 1808 continued his attempts independently at Essen. In 1810 he founded a small forging plant near Essen and in 1815 formed a partnership with Friedrich Nicolai for the production of cast steel, a product which was found excellent for certain purposes, such as mint dies, stamps for buttons, etc. Yet the demand was not sufficient to keep the works in operation, and soon after 1820 Krupp was obliged to give up his house to occupy a small one-story laborer's cottage near his plant. The hut is still preserved in the midst of the present gigantic establishment. Shortly before his death he confided to his son Alfred (qv) the secret of making cast steel, which the latter developed successfully. For a history of the great enterprise, consult *Krupp, 1812-1912* (Jena, 1912), published on the one hundredth anniversary of the birth of Alfred Krupp.

KRUPP, FRIEDRICH ALFRED (1854-1902). A German gunmaker, son of Alfred Krupp. He increased and diversified the output of the Krupp Works, which he extended by the incorporation with them of other enterprises, especially the manufacture of machinery and shipping interests. A member of the Prussian Upper House and Council of State, he also sat in the Reichstag from 1893 to 1898. Just before his death his private character was violently assailed by the Socialist newspaper the *Vorwärts*, and it was said that this arraignment hastened his end. The Emperor vigorously defended Krupp, especially in a public speech at his funeral, and the heirs began a suit against the *Vorwärts*, but soon abandoned the action.

KRUPP FOUNDRIES, SOCIAL WORK AT. About 1861 the firm of Krupp at Essen, Germany, where there were not in the town sufficient houses for their employees, began building dwellings. By 1862, 10 houses were ready for foremen, and in 1863 the first houses for workmen were built in Alt Westend. Neu Westend was built in 1871 and 1872, and a number of other colonies were established later, the last being Friedrichshof. Each colony has a market place, a coöperative retail establishment, a park, a music hall, bathhouses, etc. Now some 5000 dwellings are provided, many being given rent free to widows of former workers. A coöperative society founded in 1868 has become the Consum-Anstalt, and profits are divided according to amounts purchased. A boarding house for single men, the Ménage, was started in 1865 with 200 boarders. Insurance societies—accident, life, and sickness—exist among the men, and the firm contributes for their support \$60,000 per year. A widow's pension system is maintained, payments under which run up to nearly \$952,000 annually. There is a trust fund of \$250,000 for the benefit of the needy who are not qualified to get pensions. Essen also has a fund of \$125,000 used in building workmen's houses, and there is also a building association. Technical and manual training schools are provided. The

relations between employers and men have been excellent. It is noteworthy, however, that the spread of Socialistic ideas among the workmen at Essen has been very rapid. Consult Friedrich Krupp, *Fried. Krupp Aktiengesellschaft* (Essen, 1901).

KRUPP STEEL, **KRUPP ARMOR PLATE**; ETC. See **ARMOR PLATE**.

KRUPP VON BOHLEN UND HALBACH, fón bó'len unt hál'bak, GUSTAV G. F. M. (1870-). A German steel manufacturer. Born at The Hague, Holland, he received his education at the Gymnasium of Karlsruhe and at the universities of Lausanne, Strassburg, and Heidelberg. Entering the German foreign office in 1897, he was successively Secretary of Legation at Washington (1899-1900), attaché of the Legation at Peking (1900-03), and attaché of the Legation at the papal court, Rome (1904-06). In 1906 he married Berta, elder daughter of Friedrich Alfred Krupp (qv), and at this time was allowed to assume Krupp as a prefix to his own name. In the same year he became chief director of the Krupp Works, which, in 1903, in accordance with the will of Friedrich Alfred Krupp, had been made into a stock company, all the stock being held by the Krupps, however. In September, 1914, the Krupps, who were awarded large contracts when the European War broke out, subscribed \$7,500,000 towards the German war loan of \$1,250,000,000. In January, 1915, several houses at the Krupp Works were destroyed by bombs dropped from aeroplanes of the allies. Gustav Krupp von Bohlen und Halbach was decorated by Emperor William with the Iron Cross, first class.

KRUSE, krú'se, HEINRICH (1815-1902). A German dramatist and publicist, born at Stralsund. He studied philology at the universities of Bonn and Berlin. In 1847 he took up journalism, and in 1855 he became chief editor of the *Kölnische Zeitung*. He devoted himself, however, largely to play writing. Of his dramas the following are considered of great merit. *Die Grafen*, a tragedy (1868), which, along with Geibel's *Sophonisbe*, was awarded the Schiller prize, *Brutus* (1874), *Das Mädchen von Byzanz* (1877); *Der Verbannte* (1879). In most of his dramas Kruse outlines his characters with strength, and the play of human passion and action is expressed with true dramatic effect, but his sea stories and short epics are better. Consult F. H. Brandes, *H Kruse als Dramatiker* (Hanover, 1898).

KRUSENSTERN, krú'sen-stérn, ADAM JOHANN VON (1770-1846). A distinguished Russian navigator and hydrographer born at Haggud (Esthonia). After serving for some time in the British navy, he was intrusted in 1803 by Emperor Alexander with the command of a scientific and commercial expedition to the North Pacific coasts of America and Asia. The chief object of this undertaking was the development of the fur trade with Russian America. In connection therewith the government dispatched an embassy for the restoration of trade relations with Japan, in which purpose it was unsuccessful. The interesting geographical discoveries of Krusenstern made his voyage very important for the progress of geographical science. This voyage, in which he was the first Russian to circumnavigate the world, Krusenstern later described in his *Journey around the World* (1810-12, with an atlas of 104 plates; Eng. trans., 1813), which was soon translated

into all the principal languages of Europe. Krusenstern became an admiral in 1841. His further works include an *Atlas de l'Océan Pacifique* (2 vols., 1824-27).

KRUYS. See **CRUYS**.

KRYLOV, kré'lóf, IVAN ANDREEVITCH (1768-1844). A Russian fabulist, the son of a Moscow officer. He received the elements of his education from his mother at Tver, where he learned French from the tutor in the Governor's house. In 1785 he published an opera, *The Coffee Fortune-Teller*, and its success prompted him to write a series of operas and comedies now entirely forgotten. In 1783 he was a petty clerk in St. Petersburg in the Treasury Department. In 1797-1801 he lived with the family of Prince Golitzin as teacher and private secretary and in 1802 was secretary to him while he was Governor of Riga. This position he soon gave up and led the life of a gambler until 1806, when, having shown Dmitriev a few translations from La Fontaine, he was urged to take up this line of literary work. Three fables appeared in 1806, several original ones in 1808-09, and a collection of 23 met with great success in 1809. In 1811 another collection appeared, and Krylov was elected to the Russian Imperial Academy. In 1812 he became an assistant in the Imperial Library at St. Petersburg and was chief librarian from 1816 to 1841. In 1838 the fiftieth anniversary of his literary activity was celebrated. A monument to him was placed in the Summer Garden. Thanks to their genuine national spirit, the joyousness, simplicity, wit, and good humor that pervade them, his fables are the most popular of Russian books, being placed in the hands of children as soon as they are able to read. As a fabulist, Krylov must not be ranked much below La Fontaine. Indeed, in giving every animal a real lifelike character, Krylov has gone a great step beyond La Fontaine himself, whose animals are seldom anything but French gentlemen. This realism, together with his terse, expressive, and vernacular Russian, makes his fables the most popular bits of literature in the language. They have been translated into every important language. Consult: Ralston, *Krilloff and his Fables* (London, 1869; 4th ed., 1883), and Harrison, *Krilloff's Original Fables* (ib., 1884). An admirable study of Krylov in Russian will be found in vol. iii (pp. 213-83) of Grot's *Works* (St. Petersburg, 1901). The latest complete edition of his works is that of V. V. Kalasha in four volumes (St. Petersburg, 1914).

KRYPTON (Gk. κρυπτόν, neut. sing. of κρυπτός, *kryptos*, hidden, secret, from κρύπτειν, *kryptein*, to hide). A gaseous element discovered in the air, by Sir William Ramsay and Morris W. Travers, in 1898. The element appears to be very similar to argon and helium (qv.), but as yet very little is known of its properties, only minute quantities of it having thus far been obtained. According to Ramsay, 20,000,000 volumes of air contain only one volume of krypton. Its molecules, like those of argon and helium, are made up of single atoms, whence its atomic weight, being identical with the molecular weight, is twice the density (referred to hydrogen). From determinations of its density its atomic weight appears to be 82.9. Samples of krypton have been liquefied and even solidified: the solid melted at -169° C.; the liquid boiled at -152° C. Its critical temperature (i.e., the highest temperature at which it can be liquefied)

is -62.5° C., and the critical pressure is 54.3 atmospheres.

KSHATRIYA, kshāt'rē-yā (Skt., ruling warrior, king). The second or military caste in the Brahmanical social system. See CASTE.

KTAADIN, k'tā'din. See KATAHDIN.

KUANG HSÜ. See KWANG-SÜ

KUANZA, kwän'zä, or **COANZA**. A river of Portuguese West Africa (Map: Congo, Belgian, B 4). It rises in Lake Mussombo in the south-central part of the colony and flows at first north, then northwest, emptying into the Atlantic Ocean about 35 miles south of St Paul de Loanda and 220 miles south of the mouth of the Congo. Its length is over 700 miles. In its upper course the Kuanza flows through an elevated plateau, from which it drops to the low coast region in the cataract of Kambamke, known also as Livingstone Falls. The river is navigable for over 100 miles below Ndondo, but the entrance of ocean vessels is obstructed by a bar at its mouth.

KUBAN, koo-bā'ny'. A province in the western part of northern Caucasus, Russia, with an area of about 36,645 square miles (Map: Russia, E 6). It borders on the Black Sea and the Sea of Azov and is divided by the river Kuban into two parts, of which the northern has the character of a steppe, while the southern belongs to the region of the Caucasus Mountains and is covered to a large extent with forests. The territory is watered chiefly by the Kuban and has a mild but variable climate. Agriculture and stock raising are the chief occupations, 75 per cent of the area under crops being devoted to wheat. Tobacco is cultivated extensively. There are a number of salt lakes in the territory, and the rivers are well stocked with fish. The region contains extensive mineral deposits, including petroleum, zinc, lead, coal, and silver. The oil wells are exploited on an extensive scale. The chief manufacturing establishments are flour mills, tobacco factories, distilleries, breweries, and tanneries. The Cossacks, who constitute over 40 per cent of the inhabitants, are exempted from certain taxes and are organized on a military basis. Pop., 1912, 2,830,200, of whom over 90 per cent were Christians and the rest chiefly Mohammedans. The colonization of the territory by Russia was begun at the end of the eighteenth century, and the original inhabitants now constitute only a small part of the population. Capital, Ekaterinodar (q.v.).

KUBAN (ancient *Hypans*, or *Vardanes*). One of the chief rivers of the Caucasus, Russia (Map: Russia, E 5). It rises near Mount Elbruz, at an altitude of nearly 14,000 feet, and flows at first north and then west, finally through marshy regions which are frequently overflowed, falling by a number of arms partly into the Sea of Azov and partly into the Black Sea. Its total length is 525 miles. It is navigable for steamers for over 70 miles, but it has a very variable volume. Its chief tributaries are the Laba and the Bielaya.

KUBAN'GO, or **O'KAVAN'GO**. A river of south Central Africa. It rises in the mountains of Angola, near the source of the Kunene, and flows in a generally southeasterly direction until it loses itself in the wide, marshy tracts of western Rhodesia, north of Lake Ngami (q.v.) (Map: Cape of Good Hope, D 1). It reaches that lake through the Tonke during the rainy season, but it is also supposed that a part of its volume at high water flows into the Zambezi through the

Kuando, in which case the Kubango must be regarded as one of the principal tributaries of the Zambezi.

KUBELIK, koo'be-lék, JAN (1880-). A Bohemian violinist, born at Miehle, near Prague. He received some musical instruction from his father, who was a market gardener and when only 12 years old he entered the Prague Conservatory. In 1898 he began to give recitals, in 1900 he appeared with the Berlin Philharmonic Society and in June of the latter year made his début in London with a concerto by Paganini. His playing of that master's compositions was remarkable, and upon his American tours he met with extraordinary popular success. His technique was remarkable, but his interpretation suffered in comparison. Kubelik received numerous decorations and appointments.

KUBĒRA, or **KUVĒRA**. The Hindu god of wealth. An old Indian etymology in Sanskrit explains his name as meaning 'having a wretched (*ku*) body (*vēra*),' and it may be that this folk-etymology is not so far astray as designating the bizarre shape with which he is invested by Hindu mythology. According to Sanskrit literature, his residence, Alakā, is situated in the mines of Mount Kailasa, and he is attended by the Yakshas, Mayus, Kinnaras, and other imps, anxiously guarding the entrance to his garden, Chaitraratha, the abode of all riches. Nine treasures—apparently precious gems—are especially intrusted to his care. His wife is an ogress, Yakṣī or Yaksīnī, and their children are two sons and a daughter. As one of the divinities (Lokapālas, world guardians) that preside over the regions, he is considered also to be the protector of the North. Consult Dowson, *Hindu Mythology* (London, 1879), and Wilkins, *Hindu Mythology* (ib., 1900).

KUBLAI KHAN, koo'blī kân', or **KHUBLAI KHAN** (1216-94). Grand Khan of the Mongols and Emperor of China. He was the grandson of Genghis Khan (q.v.), through the latter's fourth son, Tuli Khan. When a boy of 10, he participated in the last campaign of his grandfather. He succeeded his brother Mangu as Grand Khan upon the death of the latter, in 1259, while engaged in a campaign to complete the subjugation of China. This task Kublai carried to a conclusion. Invited by Si Tsong of the Sung dynasty to aid in the expulsion of the Kin Tatar dynasty, he invaded China in 1260 with an immense army, drove out the Tatars, and took possession of north China. He founded the city of Khan Balig (Kambalu) and made it his capital. This was the nucleus of Peking. Kublai maintained only nominally the extended sway of the previous members of his dynasty, the great empire that had been reared by conquest having practically broken up into four divisions (see MONGOL DYNASTIES), but his rule was absolute and efficient in eastern Asia. He was one of the ablest of his race, an organizer and administrator of a high degree of ability and intelligence. He conformed in great measure to the Chinese civilization, which was far in advance of that of his own people. In 1279 he completed his conquest of China by subduing the south, and as the first foreign Emperor founded the Yuen dynasty. His repeated attacks, however, failed to reduce Japan to submission. The Venetian Polo brothers, with the better-known son and nephew, Marco Polo (q.v.), spent some years at Kublai's court and enjoyed his respect and confidence. Desiring to establish

some higher form of religion in his Empire, he made them his messengers to the Pope to invite the sending of Christian missionaries to his people. Christendom was too much occupied with its own quarrels over ecclesiastical politics to heed the invitation, and the Khan turned to the Grand Lama, the head of the Buddhists, who was not slow to seize so glorious an opportunity for the conversion of an empire. Kublai Khan died in Peking, in 1294. The Empire he had organized did not long survive under his incapable successors, and in 1368 the dynasty of Yuen was expelled from China. Consult. Yule, *Cathay and the Way Thither* (2 vols., London, 1866); id (ed.), *The Book of Ser Marco Polo* (ib., 1875); Howorth, *History of the Mongols* (4 vols., ib., 1876-88); L. J. Markae, "Kublai Khan, or the Popes and the Tartars," in *American Catholic Quarterly Review*, vol. xxv (Philadelphia, 1900).

KUBOTA. See AKITA.

KUBUS, koo'booz, or ORANG-KUBU. A people of Malay stock, inhabiting the marshy, forested region northwest of Palembang in south-central Sumatra, and one of the most primitive tribes in existence. They are particularly interesting because in the matter of character, general behavior, etc., they apparently rank higher than some of the more civilized of the kindred peoples about them. For instance, they do not appear to be such cannibals as the Battas once were. Marriages between Kubu women and Malay men are said to be rare. Besides the information in general works on Sumatra and the East Indies, such as Forbes, 1 *Naturalist's Wandering in the Eastern Archipelago* (London, 1885), reference may be made to Zelle, "Les Orangs-Koubous," in the *Bulletins de la Société d'Anthropologie de Paris* for 1891, where some useful details are given. Both physical anthropology and ethnography are dealt with in Hagen, *Die Orang Kubu auf Sumatra* (Frankfort-on-the-Main, 1908).

KUCH, or COOCH, BEHAR, kooch be-har'. A sub-Himalayan native state in the northern part of Bengal, India (Map India, F 3). Area, 1307 square miles. Though the soil is generally fertile and productive, the entire state is so low that it is difficult to drain and is subject to inundation by the Tista, Sankosh, Dhoila, and Torsa rivers. A railway extends from the frontier town of Dhubri to the capital, Kuch Behar. Crops of rice, tobacco, maize, pulses, and sugar cane are raised. In the state are the ruins of the two ancient capitals of the Kamrup Hindu dynasty, which was overthrown by the Afghans at the end of the fifteenth century. Pop of state, 1901, 566,974; 1911, 592,952.

KÜCHENMEISTER, kuk'en-mi'stēr, GOTTLIEB FRIEDRICH HEINRICH (1821-90). A German physician, specialist on intestinal parasites. He was born at Buchheim, studied at Leipzig and Prague, and practiced at Zittau and later at Dresden (1859). He distinguished the *Tænia saginata* (or *mediocanellata*) from the *armata*, showed the special danger of the pork tapeworm, and made studies in the development of trichina and other entozoa. His principal works are *Versuche über die Metamorphose der Finnen in Bandwürmer* (1852); *Entdeckung über die Umwandlung der sechshakigen Brut gewisser Bandwürmer in Blasenbandwürmer* (1853); *Die in und an dem Körper des lebenden Menschen vorkommenden Parasiten* (with illustrations, last ed., with Zurn, 1878-81). He was an eager advocate of cremation. Consult the posthumous *Die Totenbestattungen der Bibel und*

die Feuerbestattung (Stuttgart, 1893), with a biographical sketch.

KUCHÍN, ku-chín'. A numerous group of Athapaskan tribes, extending across central Alaska and the adjacent portion of British America from the Eskimo border at the mouth of the Yukon northeastward almost to the mouth of the Mackenzie. The various bands are known as Tukuth-kuchín (rat people), Han-kuchín (river people), etc., the dialects differing but little one from another. The eastern bands are also known collectively as Loucheux by the French voyageurs. The Kuchín are described as superior to their neighbors in intelligence and manly qualities. They are great traders, making long voyages up and down the Yukon between the interior tribes and those of the coast, skins being the ordinary merchandise and shell beads the medium of barter. They subsist primarily by hunting and fishing, taking large quantities of salmon in nets, fish drives, or from boats. Their ordinary dwellings are low, elliptical wickiups of poles covered with skins, sometimes occupied jointly by several families. Their dress is of deer or rabbit skin, including caps and mittens, both sexes dressing nearly alike excepting that the shirt of the man is pointed in front and behind. The men wear nose rings, and the women formerly tattooed. They are very fond of dancing, feasting, and athletic games, such as wrestling and foot-racing. The dead are usually exposed on scaffolds or sometimes cremated. The widow watches near the grave for a year, when the bones are burned and the ashes placed in a box hung from the top of a pole. A funeral feast is then made, ending with games and a distribution of presents, after which the widow is free to marry again. They are said to have decreased one-half within living memory, partly from new diseases, but largely from the widespread practice of female infanticide, which the women justify on the ground that they wish to save their daughters from the hardships to which they themselves are subjected. Consult A. G. Morice, in *Archæological Report*, 1905 (Toronto, 1906).

KÜCKEN, kü'ken, FRIEDRICH WILHELM (1810-82). A German musician, born at Bleckede, near Hanover. He studied music under Lührs, music director at Schwerin, and later with Burnbach in Berlin, Sechter in Vienna, and Halévy in Paris. At first he was a member of the court orchestra at Schwerin, but upon the success of some of his songs he was appointed music teacher to the hereditary Grand Duke. In 1839 his opera *Die Flucht nach der Schweiz* was well received, and in 1849 *Der Prätendent* followed. Two years later he became one of the two court kapellmeisters at Stuttgart and subsequently served alone until 1861. He composed sonatas for violin, piano, and cello, and quartets for male chorus, but his songs made him famous. They were exceedingly popular because of their melodiousness, and a number of them have become real folk songs. They are in the same class as those of the popular Abt (q.v.). His work, however, was never well received by musicians. He died at Schwerin.

KUDALUR. See CUDDALORE.

KUDU, koo'doo. Another name for the African antelope, the koodoo (q.v.).

KUEHL, kül, GOTTHARD (1850-). A German painter and etcher. He was born at Lübeck and studied at the Munich Academy under Von Dietz and afterward in Paris. His

earlier pictures, in their minute, piquant treatment, love of ornament, and dazzling light effects, show the influence of Fortuny; later he adopted the Naturalistic methods inaugurated by Liebermann and the French Impressionists. Kuehl is fond of painting gorgeous church interiors, views of old-fashioned cities, and interiors with scenes of peasant life. In 1895 he was appointed professor at the Dresden Academy. Among his best-known paintings are: "A Conversation" (Luxembourg, Paris); "The Elbe Bridge" and "Sad News" (Dresden Gallery); "In the Orphanage at Danzig" (Leipzig Museum); "The Old Man's Home" (National Museum, Berlin); "Sunday Morning" (Munich Pinakothek); "The Court-Yard of King Arthur in Danzig" (Vienna Museum); "Corner of a Drawing Room" and "Girl on a Green Box" (exhibited at the Metropolitan Museum, New York, 1909). He was awarded the French state medal and received gold medals at Munich and Dresden and the Prussian gold medal for art.

KUEICHOU. See KWEICHOW.

KUENEN, ku'nen, ABRAHAM (1828-91). A distinguished biblical scholar and one of the founders of the modern critical school. He was born at Haarlem, Sept. 16, 1828, studied at Leyden, and was made professor of theology there in 1853. He died at Leyden, Dec. 10, 1891. Kuenen early distinguished himself by his fearless application of critical methods in the study of the Old Testament regardless of tradition or the consequences alleged to result from such methods. His publications are marked by great accuracy and keen critical and historical acumen, and he lived to see his methods approved and many of his theories adopted by the majority of scholars in Europe and America. His works include: *Liber Geneseos* (1851); *Libri Exodus et Levitici Secundum Arabicam Pentateuchi Samaritani Versionem ab Abu Saido Conscriptam* (1854); *Historisch-kritisch Onderzoek naar het ontstaan en de versameling van de boeken des Ouden Verbonds* (1861-65; 2d ed., 1885-93; Eng. trans. of vol. i, *The Hexateuch*, London, 1886); *De godsdienst van Israël tot den ondergang van den Joodschen Staat* (1869-70; trans., *The Religion of Israel*, 5 vols., London, 1874-75); *De profeten en de profetie onder Israël* (1875; trans., *Prophets and Prophecy in Israel*, London, 1877); *National Religions and Universal Religion* (Hibbert Lectures, 1882). From 1867 till his death he was one of the editors of the *Theologisch Tijdschrift*, and in this journal many of his most important investigations of special points connected with the composition of the Pentateuch and historical books of the Old Testament appeared. A number of his articles in this periodical were collected and published after his death in a German translation by Karl Budde, under the title *Gesammelte Abhandlungen zur biblischen Wissenschaft* (Freiburg, 1894).

KUEN-LUN, kwën'loón', or **KUN-LUN.** A great mountain system of Central Asia, lying on the north edge of the plateau of Tibet (Map: Asia, K and L 5). The physical relations of the mountain ranges in this part of Asia have not been as yet clearly explained; but most authorities, following Richthofen, include under this system the various groups of highlands that stretch in an easterly direction from the Pamirs to the interior of China. As thus defined, the Kuen-lun is one of the most important mountain systems of Asia, mostly because

of its effects as a barrier to migration. In the western section, formed by the mountains of Kashgar and the Russian chain, between East Turkestan and India and Tibet, the mountains exceed 20,000 feet in elevation and carry enormous snow fields and glaciers. The few passes, which rise to altitudes of 15,000 feet or more, can be crossed only with extreme difficulty by using the yak as the beast of burden. The narrow gorgelike valleys of the Yarkand and Karakash are the only notable interruptions in this part. East of about long. 89° E. the Kuen-lun system is developed as a series of parallel or slightly diverging chains. The most northerly chains—the Altyn Tagh and Nanshan—follow the north boundary of Tibet towards northwest China proper; they attain an extreme elevation of 15,000 to 20,000 feet. The central and southern ranges, including the Marco Polo, Columbus, Przhevalski, and others, have a southeasterly trend and are of more broken character. East of the Chinese frontier the system is developed in two lines of highlands which extend across north China almost to the coast.

KUFIC WRITING. A peculiar type of the North Arabic script, characterized by its angular form. It appears for the first time in a trilingual (Greek-Syriac-Arabic) inscription from the year 512 A.D., found at Zebed, and in a bilingual (Greek-Arabic) inscription, dated in 508 A.D., discovered in the Leja. As it shows the greatest similarity to the script used in the Nabataean inscriptions found on the Sinaitic Peninsula, while the earlier form of the Nabataean alphabet, found at Petra and in Hejaz, may still be seen in the Arabic inscription from Nemara written in 328 A.D., it has been inferred that the so-called Kufic developed from the Sinaitic in the course of the fourth and fifth centuries A.D. This angular form of the alphabet lent itself especially to monumental use, such as inscriptions on buildings and legends on coins. For writing on parchment and papyrus, a more cursive, round script was used, called Naskhi. We now possess papyri in which this form of writing is used that go back to the first half of the seventh century A.D., and a very large number belong to the second half of that century. From its character it is evident that it must have been in use for a long time, together with the more angular Kufic. Whether the suras dictated by Mohammed in Mecca and Medina were written down by his scribes in Naskhi or Kufic is a question which cannot, in the present state of our knowledge, be answered definitively. Either is possible, though the probability is somewhat in favor of the Naskhi where the writing was on papyrus and a modified form of the angular script where other material was used. The same uncertainty applies to the edition made by Uthman and the earliest copies of the Koran. The oldest dated manuscript of the Koran was written about 784 A.D. In this as in all copies of the Koran coming from the third and fourth centuries of the Hejira, with one notable exception, the script is Kufic. There can be no doubt that it is named after the city of Kufa, which until the foundation of Bagdad was the most important centre of Moslem life in the East, and it is natural to suppose that the monumental script was there employed for the first time in writing on papyrus. The Kufic character, which is of a somewhat clumsy and ungainly shape, was almost never used for any other literary pro-

ductions in Islam than the Koran, a fragment of a grammatical work being the only known exception. The distinction from the cursive Naskhi used for popular purposes the Kufic was a hieratic script. It was employed in inscriptions on mosques, palaces, and forts, and on the coins of Moslem rulers, until it was crowded out by the Naskhi, which meanwhile had grown more perfect. Epigraphically it is found in several forms. The simple Kufic was employed from the first century of the Hejira up to the middle of the fourth. It has all the angular character of this script. The *ornamental* Kufic is represented by the inscriptions of the Fatimid dynasty in Egypt (969-1171); this has wrongly been called the Karmatian. The *decorative* Kufic is used for Koran verses which simply serve the purpose of adornment. Since the introduction of the round Naskhi characters the decorative Kufic has developed several varieties. Sometimes the letters take the form of leaves and branches, sometimes they are elongated and thin; or, again, they are square and geometric. The victory of the Naskhi over the Kufic is supposed to have been due to the Sunnite reaction under the Seljuks, Atabeks, Nur el-din, and Saladin. But it is at least doubtful whether the progress was from the east to the west rather than the opposite. Naskhi seems to have appeared earlier in the Far West on the coins of the Almoravides (q.v.) from 1106 on, than in Mesopotamia, Syria, and Egypt, where it entered with Saladin. The earliest Naskhi inscription in Syria is of 1155. The last Fatimid inscription in ornamental Kufic in Cairo is dated 1160. Saladin's first inscription in Cairo (in Naskhi) is dated 1183. Different kinds of these Naskhi (in which the alphabet is arranged according to the outward similarity of the letters) are the *Du'ān* (only employed for decrees, passports, etc.), the *Ta'lik* (the court script, chiefly used in Persia since 1010), the *Thuluth* (threefold, highly flourished and involved, used at the head of books and documents), the *Yakuti*, *Rigān*, etc. The Maghrebin cursive script used in northwestern Africa is a direct development of the Kufic.

Bibliography. Rogers Bey, "Notices sur les papyrus (arabes) postérieurs à l'ère chrétienne," in *Bulletin de l'Institut Egyptien* (Cairo, 1880); Octave Houdas, *Essai sur l'écriture maghrébine* (Paris, 1886); Von Berchem, *Corpus Inscriptionum Arabicarum* (ib., 1894-1900); Taylor, *The Alphabet*, vol. i (2d ed., London, 1899); Moritz, *Arabic Palaeography* (ib., 1909); id., "Arabische Schrift," in *Enzyklopädie des Islam*, vol. i (Leyden, 1910).

KUFOW. A city in China. See KIUHFW.

KUFT. kuft. See KOPTOS.

KUGLER, koo'glër, FRANZ (1808-58). A German art historian and poet. He was born at Stettin and studied at the universities of Berlin and Heidelberg and at the Academy of Architecture, Berlin. After the completion of a very diversified course of study he devoted himself to the history of fine art. In 1833 he became a professor of art history in the Academy of Fine Arts and docent in the University of Berlin. His best-known work is the *Handbuch der Geschichte der Malerei*, etc. (Manual of the History of Painting from the Time of Constantine the Great to the Present Day) (1837), which has been translated into English—the part relating to Italian art by Sir Charles and Lady Eastlake and revised by Austen Henry

Layard (London, 1891; latest ed., 1907), and that relating to the German, Dutch, and Flemish schools under the editorship of Sir Edmund Head, revised by Sir Joseph A. Crowe (London, 1898). These works were for years standard manuals. His other works include a *Handbuch der Kunstgeschichte* (Manual of the History of Art) (1842; revised by Lübke, Stuttgart, 1871-72), the first attempt to treat the subject in its relation to the great historical epochs; *Geschichte der Baukunst* (Berlin, 1855-60), the most complete work on the subject in its day. Kugler is also known as a poet and as the author of several dramas, published in his *Belletristische Schriften* (Berlin, 1852). His works, characterized by sound scholarship, rank him rather as an historian than as a critic.

KUH, koo, EMIL (1828-76). An Austrian critic and poet, born in Vienna, of Jewish parents. He studied philosophy and history, embraced Catholicism in Berlin in 1857, and returned to Vienna, where he became prominent as a literary critic through his contributions to the leading newspapers, and in 1864 was appointed professor of German language and literature at the Handelsakademie. His most valuable work is a comprehensive biography of Friedrich Hebbel (1877), although its partiality provoked great opposition. Besides, he published: *Ueber neuere Lyrik* (1865), an excellent essay; *Zwei Dichter Oesterreichs: Franz Grillparzer und Adalbert Stifter* (1872), *Dichterbuch aus Oesterreich* (1863), an unusually well-selected anthology. His own lyrics are original in sentiment and graceful in diction, but of little significance. With Julius Glaser he edited the collected works of Hebbel (Hamburg, 1864-66), and with Pachler the *Nachlass* of Friedrich Halm (Vienna, 1872). Consult article in the *Allgemeine deutsche Biographie*, vol. xvii (Leipzig, 1883).

KUHLAU, koo'lou, FRIEDRICH (1786-1832). A German composer, born at Velzen, Hanover. When very young, he lost one eye, but despite this handicap and his poverty, which compelled him to gain a living by singing in the streets, he managed to study harmony under Schwencke in Brunswick. To avoid the conscription in Germany he went to Copenhagen in 1810, where he became first flute in the King's band (1813) and five years later became court composer. Meanwhile he had composed a number of operas, popular in their day, but long since forgotten. His songs, quartets, and concertos were once widely known, but at present only his sonatas and sonatinas (two and four hands) for the piano are in use. These, however, seem likely to remain for some time among the really valuable material for young players.

KUHN, koon, ERNST (1846-). A German Orientalist, son of Franz Felix Adalbert Kuhn, born in Berlin. He was educated there and at Tübingen, and, after lecturing four years at Halle and Leipzig, in 1875 became professor of Sanskrit and comparative philology at Heidelberg. Two years later he went to Munich as professor of Sanskrit. After his father's death he became editor of Kuhn's *Zeitschrift für vergleichende Sprachforschung* (merged with Bezzenberger's *Beiträge zur Kunde der indogermanischen Sprachen* in 1906), and from 1892 to 1894 edited the *Orientalische Bibliographie*. One of his most important works is the *Grundriss der iranischen Philologie*, published with Geiger (Strassburg, 1895-1904). He also published

important studies on Pali, Singhalese, and other Oriental languages. Among his later writings are *J. K. Zeuss zum 100 jährigen Gedächtnis* (1906) and *Uebersicht der Schriften Theodor Nöldeke's* (1907).

KÜHN, kün, or **KINO**, kē'nó, EUSEBIUS FRANZ (c.1644–1711). A Jesuit missionary, born in Trent, Austria. After teaching mathematics for a time at the University of Ingolstadt, he sailed on a mission to Mexico, where he and Father Salva Tierra undertook (1686) to convert the native tribes in what are now California and Arizona. Father Kuhn's labors met with great success. The result of his long and hazardous foot journeys was the establishment of the missions of Santa-Maria Somanca, Gueravi, Cocospera, San Cayetano, and 10 others, the largest being San Xavier del Bac in Arizona. Few of these survived him, but his manuscripts remain, and two of them were printed under the titles *Explicación astronómica del cometa que se vió en todo el orbe en 1680 y 1681* (Mexico, 1681) and *Mapa del paso por tierra á la California* (1706).

KUHN, FRANZ, BARON VON KUHNENFELD (1817–96). An Austrian general born at Prossnitz, Moravia. He entered the army in 1837, took part in the campaigns of 1848 and 1849 in Italy and Hungary, and distinguished himself particularly in the battles of Santa Lucia and Custoza and at Milan. He was made a noble in 1852. During the Italian campaign of 1859 he was chief of staff, and in 1866 commander of the forces in Tirol, where he successfully repulsed the invasion of Garibaldi. Promoted after the war to lieutenant field marshal, he was appointed Minister of War in 1868, in which capacity he rendered important services by reorganizing the army and perfecting the Landwehr. In 1873 his rank was raised to that of feldzeugmeister, and in 1874 he assumed the command of the forces in the provinces of Styria, Carinthia, and Carniola, and of the Third Army Corps at Graz. He was suddenly relieved of his post in 1888, owing to his overfrank criticism of the inspector general of the army, Archduke Albrecht. Besides various writings on astronomical, geographical and military subjects, he published *Der Generalstab* (2d ed., 1878).

KUHN, FRANZ FELIX ADALBERT (1812–81). A celebrated German philologist and mythologist, born at Königsberg, Prussia. He was educated at the University of Berlin, in 1841 became an instructor in the Köllnisches Gymnasium of Berlin, in 1856 a professor in that institution, and in 1870 its director. He was a founder (1851) of the *Zeitschrift für vergleichende Sprachforschung*, in which Karl Verner published (1875) the article "Eine Ausnahme der ersten Lautverschiebung," the first announcement of Verner's law (q.v.); and (1856) of the *Beiträge zur vergleichenden Sprachforschung*, combined with the former in 1875 in the *Zeitschrift für vergleichende Sprachforschung auf dem Gebiete der indogermanischen Sprachen*. His *Zur ältesten Geschichte der indogermanischen Völker* (1845) was a pioneer attempt towards a restoration of the civilization of the primitive Indo-European race by means of a comparative study of the Indo-European languages. Kuhn was a founder of the new science of comparative mythology, to which he contributed numerous papers in the journals edited by him, and his admirable *Herabkunft des Feuers*

und des Gottertranks (1859; new ed., 1886), standard in its field and an admitted criterion for researches of the sort. Kuhn upheld the theory, now abandoned, of the essentially linguistic origin of myths in *Ueber die Entwicklungsstufen der Mythenbildung* (1873). He also wrote on specifically Teutonic mythology and folklore: *Markische Sagen und Marchen* (1842); *Norddeutsche Sagen, Marchen und Gebräuche* (1848); *Sagen, Gebräuche und Marchen aus Westfalen* (1859).

KUHNAU, kōū'nou, JOHANN (1660–1722). A German musician and author, born in Geising, Saxony. As a pupil of the Kreuzschule at Dresden and as a chorister in that city, he gained a thorough musical education. In 1680 the plague compelled him to leave Dresden, and after serving as cantor at Zittau he became (1684) organist of St. Thomas's at Leipzig. In 1700 he was made musical director of the university there and cantor at St. Thomas's, where J. S. Bach became his successor. Of his compositions, those for the piano (clavier) are most important, and he is ranked as the greatest composer for that instrument before Bach. He is particularly famous for having developed the separate movements of the piano sonata. He wrote a number of books on music and besides was the author of many translations and some excellent satirical poetry. He died in Leipzig. Consult G. E. Wagner, *Johann Kuhnau* (Frauenstein, 1912).

KÜHNE, kü'ne, AUGUST (1829–83). A German novelist, whose pseudonym was Johannes van Dewall. He was born at Herford in Westphalia, the son of an officer. In 1848 he became an officer in the artillery at Berlin, and he took part in the campaigns of 1866 and 1870. His first essay in literature was *Geschichte des dänischen Feldzugs* (1864). *Skizzen aus dem Feldzug von 1866* (1868) was published anonymously. Like the history of the Danish campaign, it showed its author to be possessed of a keen insight and lively style. But he is better known for his later works, the humorous tales, *Kadettengeschichten* (1878), and such novels as *Eine grosse Dame* (2 vols., 1875), *Der rote Baschkik* (1873), *Der Ulan* (1875), *Der Spielprofessor* (1874, 3d ed., 1892), *Unkraut im Weizen* (1877); *Die beiden Russinnen* (1880), *Nadina* (1884). His best novel is *Strandgut* (3 vols., 1877). They all depict the life of officers and society women and the upper classes of the demimonde.

KÜHNE, FERDINAND GUSTAV (1806–88). A German novelist and critic, born at Magdeburg and educated at Berlin, where he was a pupil of Hegel. From 1835 to 1842 he edited *Die Zeitung für die Elegante Welt*, from 1846 to 1850 the *Europa*. His relation to the "Young Germany" movement is manifest in his early novel, *Eine Quarantäne im Irrenhause* (1835), and his *Christus auf der Wanderschaft*, a satire on the papacy (1870), and in the *Klosterromane* (2 vols., 1838 and 1877). His poetry in its general tone, if not in its purpose, may be considered typical of the same school, although it did not go to the extremes. Besides his novels, mostly historical, e.g., *Die Rebellen von Irland* (3 vols., 1840) and *Die Freimaurer*, probably his best novel (1854), his dramas, *Isaura von Kastilien*, *Kaiser Friedrich III.*, and *Die Verschwörung von Dublin*, and the continuation of Schiller's *Demetrius*, only moderately successful, especial mention should be made of his

critical essays, such as *Weibliche und männliche Charaktere* (1838); *Portraits und Silhouetten* (1843); and, among his best works, *Deutsche Männer und Frauen* (1851), which clear, elegant style made popular. In 1890 Pierson edited *Empfundenes und Gedachtes: Lose Blätter aus G. Kühnes Schriften*. Consult Pierson, *Gustav Kühne* (Dresden, 1890).

KÜHNE, WILHELM (1837-1900). A German physiologist, born in Hamburg. He received his scientific training at Göttingen, Jena, Berlin, Paris, and Vienna, was chemical assistant in the Pathological Anatomical Institute of the University of Berlin in 1861-63 and professor of physiology in the University of Amsterdam from 1868 to 1871. In 1871 he was appointed to the chair of physiology and the directorship of the Physiological Institute at Heidelberg. He made original researches in physiological chemistry, especially of digestion, in nerves and muscles, and in the chemical influence of light on the retina. His publications include *Myologische Untersuchungen* (1860), *Lehrbuch der physiologischen Chemie* (1866-68); and, after 1883, with Voit, he edited the *Zeitschrift für Biologie*.

KUHNENFELD, kōō'nēn-fēlt, BARON VON. See KUHN, FRANZ.

KÜHNER, ky'nēr, RAPHAEL (1802-78). A German classical scholar. He was born in Gotha, was educated at Göttingen, and from 1824 to 1863 taught in the Hanover Lyceum. He published an edition of the *Tusculana Disputationes* of Cicero (1829, 5th ed., 1874). His large *Greek Grammar* (2 vols., 1834-35), translated by Jelf (1842-45), a vast collection of materials, reached a third edition, in four volumes, by Blass and Gerth (1890-1904). His large *Latin Grammar* (2 vols., 1877-79) has been reedited in enlarged form by Holweilig and Stegman (Hanover, 1912-14). His smaller *Greek Grammar* and *Latin Grammar* passed through many editions.

KÜHREIGEN, kōō'rī'gen, DER (Ranz des Vaches). An opera by Kienzl (qv), first produced in Vienna, Nov. 23, 1911, in the United States, Feb. 21, 1913 (Philadelphia). For description of the musical term, see RANZ DES VACHES.

KUICHLING, kīsh'ling, EMIL (1848-1914). An American hydraulic and sanitary engineer. He was born at Kehl, Germany, but came early to the United States and graduated from the University of Rochester in 1870. In 1870 to 1873 he studied at the Karlsruhe (Germany) Polytechnic School. He served as assistant engineer on the New York State canals in 1869 and 1873 and as assistant engineer in 1873-85 and chief engineer from 1890 to 1900 of the Rochester water works, and from 1881 to 1891 was consulting engineer for the New York State Board of Health. In 1890 he established himself as a consulting engineer in New York City. He constructed the sewerage and water works of many cities in the United States, and was author of several articles in technical journals on hydraulic and sanitary engineering.

KUILENBURG, kōō'len-būr-k, or CULEN-BORG, kōō'len-bōrk. A town of the Netherlands, situated on the left bank of the river Leck, 12 miles southeast of Utrecht (Map: Netherlands, D 3). Its town hall dates from the sixteenth century. The town has a good harbor and is well known for its railroad bridge, which crosses the river in a single span of

492 feet and in 4200 feet in total length. The principal manufactures are glass, lumber, cigars, ribbons, and flour. Pop., 1899, 8280; 1910, 8965.

KUIS. See INDO-CHINESE.

KUKA, kōō'kā. Formerly one of the largest towns of Central Africa and capital of the Kingdom of Bornu (qv), situated near the west coast of Lake Chad (Map: Africa, F 3). It consists of two distinct towns—one to the east with the court and aristocracy and the other the masses. Pop. (est.), 60,000. Kuka was formerly an important slave market and junction point of many caravan routes. It was completely destroyed by Rabeh, the conqueror of Bornu, in 1898, and rebuilt by the British in 1902.

KU-KAI, kōō'kī. See KŌBŌ DAISHI.

KU-KLUX KLAN, or KUKLUX, kū'klūks' (from Gk. κύκλος, *kyklos*, circle, so called as being a secret society, and Eng. *clan*, with altered spelling to give the mysterious abbreviation K. K. K.) A secret organization which existed in some of the Southern States during the period, roughly speaking, from 1865 to 1876. The period of its greatest activity was from 1868 to 1870. It is said to have originated in Pulaski, Tenn., in 1865, during the administration of Governor Brownlow, and to have been at first an association of young men for mutual pleasure and amusement. The demoralization and turbulence of the negroes at the close of the war necessitated, it was felt, some means of restraint, which the government did not then afford. The "association" devised by the young men of Tennessee was adapted to this purpose. In its beginnings it was not greatly different from the old slave patrol and was intended simply to scare the superstitious blacks into good behavior and obedience, and its membership comprised some of the best citizens of the South. Its original purposes as set forth in the prescript or constitution of the Klan, a copy of which is printed in the report of the so-called Ku-Klux Committee of Congress, were the protection of the weak and innocent from the outrages of lawless and brutal persons; the relief of the injured and oppressed; the extension of aid to widows and orphans of Confederate soldiers, and assistance to the government in the execution of all constitutional laws. The prominent Southerners who testified before the committee asserted in justification that it was intended to counteract the evil influence of the Loyal Leagues, or secret political organizations of the negroes, which were formed under the direction of "carpetbag" politicians for the purpose of controlling the votes of the blacks in the elections. In a word, its object was to oppose the influence of the negro in government and society.

But the organization was soon perverted. It became a band for the purpose of whipping, banishing, and murdering negroes and "Northern men." Many of the better class of citizens abandoned it, and henceforth it consisted of the more restless and lawless characters of the South. At first the organization did not bear the same name in every part of the South. It was variously known as the Knights of the White Camelia, the Pale Faces, the Brotherhood, etc., but eventually came to be known everywhere by the more mysterious name of the Ku-Klux Klan. Its sphere of operations was styled the Invisible Empire; the chief function-

ary was the Grand Wizard; each State was a Realm, ruled over by a Grand Dragon, each congressional district was a Dominion, at the head of which was the Grand Titan; each county was a Province under the rule of a Grand Giant; and each county was subdivided into Camps or Dens, each governed by a Grand Cyclops. The members of a Den were called Ghouls. They went disguised in their nocturnal raids, the prevailing costume being a long white robe, a mask for the face, and a high cardboard hat or cap with ears or horns attached. The horses which they rode were quite as effectively disguised. Exaggerated tales circulated among the freedmen as to the numerical strength and supernatural powers of the Ku-Klux, said to be spirits of dead Confederate soldiers. Resolutions to punish were introduced in secret meeting of the Klan, and its decision took the form of a decree. The most frequent victims were negroes active in politics, agents of the Freedmen's Bureau, "carpetbaggers," "scalawags," and Northern school-teachers and ministers. These were sometimes merely warned to desist from a certain course or notified to leave the community, but sometimes suffered punishments of whipping or death. In the case of a mere warning or notification the decree was couched in a strange and half-mysterious phraseology and posted in some conspicuous place about the premises of the victim for whom it was intended. The following is a typical example:

K K K. Dismal Swamp
2D, XI A. 11th hour

Mene, mene, tekell upharin. The bloody dagger is drawn, the trying hour is at hand, beware. Your steps are marked, the eye of the dark chief is upon you. First he warns, then the avenging dagger flashes in the moonlight.

By Order of the Grand Cyclops

LIXTO.

Following the withdrawal of the military governments in the South between 1868 and 1870 and the restoration of civil government, the Ku-Klux "outrages" increased to such a degree as to threaten the general security. Republican legislatures passed stringent acts to break up the Klan and bring its guilty members to justice, but public sentiment was not sufficiently strong against Ku-Klux methods to make the enforcement of the laws effective. Furthermore, since its deeds were usually committed at night by men in disguise, it was difficult to get sufficient evidence upon which a grand jury could frame a bill, or, if that could be done, it was next to impossible to impanel a jury that would find a verdict for the State, few men being courageous enough to give testimony that would incriminate a member of the Klan. Consequently the efforts of the Republican State governments accomplished little towards breaking up the disorder.

On March 23, 1871, President Grant sent a special message to Congress in which he declared that life and property were insecure in some of the Southern States, and that mail carriers and revenue collectors were in danger of personal violence. He urged Congress to enact appropriate legislation to meet the situation. A joint select committee of 21 members was thereupon appointed to inquire into the condition of affairs in the South. A subcommittee took the testimony of various persons at Washington, who were partly familiar with the situation in the South, and other subcommittees were appointed to visit and take testimony in the

affected States. Their report showed the existence of but little disorder in Virginia, Florida, or Louisiana, but pointed out that many crimes, some of them revolting in character, had been committed for political reasons only in various localities of Alabama, Mississippi, South Carolina, Georgia, North Carolina, Tennessee, and Texas, and that life and property were insecure in many localities. Without waiting for the report Congress, on April 20, 1871, passed the Enforcement Act, popularly known as the Ku-Klux Act, or Force Bill. Its most important provision was the extension of the jurisdiction of the United States courts to all Ku-Klux cases, and the authorization of the President to employ the land or naval forces to suppress disorders and to suspend the writ of habeas corpus during the continuance of the Ku-Klux troubles. It also authorized the Federal judges to exclude from the juries those who were believed to be accomplices of persons engaged in committing Ku-Klux outrages. The law seems to have caused a great falling off in the number of Ku-Klux outrages, and the Klan gradually died out. The movement had accomplished its chief object by replacing the whites in control of society and government. Consult Lester, Wilson, and Fleming, *The Ku-Klux Klan* (New York, 1905). For constitutions and rituals of the Ku-Klux Klan and the Knights of the White Camelia, consult Fleming, *Documentary History of Reconstruction* (2 vols., Cleveland, 1907).

KUKOLNIK, koo'kol'-nyik, NESTOR VASILYEVITCH (1809-68) A Russian dramatist and novelist. His style is florid and rhetorical. His novels include *Evelina* (1840), *Patkul*, and *Alfy Aldona* (1842). His plays are extremely patriotic and very bombastic. Among them are *Torquato Tasso* (1833), *Kniaz Kholmakiy* (with music by Glinka), and *Gulio Mosti*.

KUKUI, CANDLENUT, TUNG, or CHINESE WOOD OIL. The oil expressed from the kernels of the fruit of several species of *Aleurites*. In Hawaii the common species is *Aleurites moluccana* or *Aleurites triloba*, in Japan *Aleurites cordata*, in China *Aleurites montana* and *Aleurites fordii*. These species are found from Japan and China to India, the Philippines, Australia, Polynesia, etc., and some have been successfully introduced into other countries. The trees attain a height of 40 to 60 feet, have variously lobed leaves, and produce fruits 2 to 3 inches in diameter, each containing 2 to 5 or more oil-bearing seeds. The seeds yield 50 to 60 per cent of oil, which is said to be one of the best drying oils known. It is largely used in the production of varnish which dries more quickly and is less liable to crack than that made from kauri gum. The oil has a specific gravity of 0.94, dries quickly when used with paint, and preserves wood against moisture. The imports of oil into the United States in 1911 were 5,800,000 gallons, valued at about \$3,000,000. The pomace after the oil has been expressed is valuable as a fertilizer. The Chinese species, *Aleurites fordii*, has been introduced and successfully cultivated since 1906 from South Carolina to Florida and west to Texas and in California. Attempts are being made to revive the industry in Hawaii, where the tree is one of the dominant species of the lower mountains.

KUKULCAN, koo'-kool'-kan. A culture hero or divinity of the Maya, next in importance to

Itzamna at the time of the Spanish conquest. The name means 'feathered serpent' and is equivalent to the Aztec Quetzalcoatl. Many students have identified Kukulcan with the Long-nosed God of the ancient Maya sculptures and manuscripts. This god, who was especially connected with water, has a grotesque face that in reality is a modified serpent face. The cult of this divinity flourished in the first centuries of the Christian era in southern Yucatan, Guatemala, and western Honduras. It seems to have spread northward into Mexico, if we may judge by the sculptures and pottery of the Zapotec and pre-Aztec tribes. Under the name Quetzalcoatl (q.v.), a mere descriptive term, this divinity was especially worshiped at Cholula, one of the earlier Mexican cities. He was regarded as the patron god of fine arts and of the older order of civilization. Traditions connected him with the east, i.e., Yucatan. The pictures of Quetzalcoatl as God of the Morning Star and of Ehecatl as God of the Winds are very similar to each other in Mexican codices and betray their serpent origin.

It is likely that Kukulcan is simply the name under which the ancient Maya god was reintroduced into his native land when Mexican rulers secured a foothold in northern Yucatan in the thirteenth century. His worship was particularly strong at Chichen Itza, which became the capital of the conquerors, and in late traditions he was credited with the founding of this ancient city. The round towers at Chichen Itza and Mayapan are supposed to be connected with the worship of Kukulcan. These buildings are of late date and are unlike any other structures in Yucatan.

KUKULJEVIĆ-SAKČINSKI, koo'kool-yá'-vich-sák-chín'ské, IVAN (1816-89). A Croatian author and statesman, born at Warasdin. He was educated at Agram, served in the army (1833-42), and then entered politics. His first poem, "An Kroatien," and a few of his other works were written in German, but he is best known for his writings in the vernacular. In 1839 he wrote the first Croatian drama, *Juran i Sofija*. His collected works, *Različita dela* (1842-47), contain poems, dramas, and novels. He was prominent in the agitation of 1848 and for many years was a member of the Croatian Diet. He founded the South Slavonic Academy of Agram and was its president. Among his historical works, besides contributions to the *Archives of the South Slavic Historical Society*, are: *Jura Regni Croatiae, Dalmatiae, et Slavoniae* (1861-62); *Monumenta Historica Slavorum Meridionalium* (1863-75), *Codex Diplomaticus Regni Croatiae, Dalmatiae, et Slavoniae* (1876); and a history of the war against the Mongolians, *Borba Hrvatah s Mongolih* (1863). He also wrote the valuable bibliographies *Slovník umjetnikah jugoslavenskih* (Dictionary of South Slavic Studies, 1858-60) and *Bibliografija hrvatska* (Croatian Bibliography, 1860-63).

KUKU NOR, koo'koo nor', or **KOKO NOR**. A region of Tibet (q.v.).

KUKU NOR, or **KOKO NOR**. A salt lake in the Tibetan province of the same name, situated in the northeast corner of the country, 200 miles northeast of the sources of the Hoang-ho, and at an altitude of 10,000 feet above sea level (Map: China, G 4). It is 60 miles long and 40 miles wide, over 200 miles in circumference and 2300 square miles in extent. The Kuku Nor Mountains rise from its south

shore to a height of over 15,000 feet. Its name, in Chinese Tsing-hai, means 'blue sea,' from the beautiful color of its water. It contains several islands, on one of which is a Buddhist monastery, the home of hermit lamas. No communication is held with the mainland, except in winter, when the ice permits the passage of Buddhist pilgrims to the island, with presents and provisions for the hermits.

KULAMAN, koo-lá'mán. A wild tribe on the west coast of Davao Gulf. They appear to be recent arrivals in the Philippines and are only just beginning to accommodate themselves to a settled existence. So far as is known, this is the only true head-hunting tribe on the island of Mindanao. At certain phases of the moon the warriors are compelled to go in quest of victims, in order that the spirits who guard the tribe may be well disposed. A successful warrior is permitted to wear a distinctive type of garment, which varies in color to the number of lives to his credit (see F. C. Cole, *Wild Tribes of Davao District* (Field Museum Publication, Chicago, 1913). See PHILIPPINE ISLANDS.

KULANAPAN, koo-lá-ná'pán. A North American Indian stock. See POMO.

KULBARGA, kul-búr'ga. A town in India. See GULBARGA.

KULDJA. See KULJA.

KULISH, koo'lish, PANTELEYMON ALEXANDROVITCH (1819-97). A Russian author, born at Voronezh and educated at Kiev. He taught for several years and as a friend and follower of Kostomarov (q.v.) was arrested for his radical politics, imprisoned for two months, and for three years exiled to Tula. He wrote a life of Gogol (1856); ethnographical studies on southern Russia, *Zapiski o yuzhnoy Rusi* (1856-57); an historical novel on Russia in 1663 (1857); and collections of tales and poems in Russian and the dialect of Little Russia.

KULJA, kool'já, or **KULDJA**. A town of East Turkestan, in the valley of the Ili, in lat. 43° 58' N, long. 81° 25' E. (Map: China, D 3). It is usually called "Old" or Tatar Kulja, to distinguish it from Manchu or "New" Kulja, founded in 1764, the ruins of which lie lower down the valley, the city (once a thriving town of 75,000 inhabitants) having been destroyed during the Mohammedan Rebellion, 1865, and its Chinese population exterminated. The name is also applied to Ili, the province in which Kulja stands. By agreement with China Russia in 1871 undertook to occupy the city and province until such time as China could establish permanent government there. By treaty made in 1881 Russia withdrew, but retained a portion to provide a place "where the rebels could find a refuge," and received an indemnity for withdrawing of 9,000,000 rubles. During the Russian occupation Old Kulja was the capital. It is a walled town in Chinese style and has a population of about 10,000, chiefly Taranchi or native Turks. Russia has a consul here with a very large staff. The Chinese capital is now at Suiting, some 25 miles distant.

KULLAK, kul'ák, THEODORE (1818-82). A German musician, born at Krotoschin, Posen. He was intended for the legal profession, but studied music under Albert Agthe, Hauch, Czerny, Sechter, and Nicolai. In 1843, after having already had some experience as a teacher, he became the music teacher to Princess Anna and subsequently to the other children

of the royal family. He founded two conservatories in Berlin, one in 1851 and one in 1855, both of which soon became institutions of the first rank. In 1861 he received the title of royal professor. He was an excellent pianist and a distinguished teacher (Moszkowski and Scharwenka were among his pupils), and wrote *Schule des Oktavenspiels*, known in English as *School of Octave Playing*, which is universally used. His music was principally for the piano and was dainty and popular.

KULLBERG, kul'bar-y', KARL ANDERS (1815-97). A Swedish poet and translator, born in the Province of Skaraborg and educated at Upsala. In 1850 he published a collection of *Dikter* which showed a sense of form, but less marked poetical originality. In 1865 he became a member of the academy. He is best known as translator of Tasso's *Gerusalemme liberata* (2 vols., 1860), Ariosto's *Orlando Furioso* (4 vols., 1865-70), and Petrarch's *Canzonier, Ballader, och Sestimer* (1880). For these translations he was awarded the academy's prize in 1860 and two prizes of the Academy of Sciences (1865, 1871).

KULM, kulm. A small village of Bohemia, Austria, situated 8 miles northeast of Teplice. It is noted as the scene of two bloody conflicts, on Aug. 29 and 30, 1813, between the French and allied German, Russian, and Austrian troops, which resulted in the surrender of the French general Vandamme, with about 10,000 men, after having lost about 5000 men on the field. Pop., 1081.

KULM, or **CULM**, kulm. A town of Prussia in the Province of West Prussia, near the Vistula, about 23 miles northeast of Bromberg (Map: Prussia, H 2). Among its notable buildings are the town hall, dating from the sixteenth century, and the church of St. Mary, the former cathedral of the bishopric of Kulm. It manufactures machinery, boilers, lumber, vinegar, and bricks, has a large oil mill, and handles some grain. Pop., 1890, 9762, 1910, 11,718. Kulm was bestowed by Frederick II in 1226 upon the Knights of the Teutonic Order, who fortified it and made it one of their chief strongholds. In 1466 it was ceded to Poland and in 1772 was annexed to Prussia.

KULMBACH, or **CULMBACH**, koolm'bag. A town in the Province of Upper Franconia, Bavaria, on the White Main, 14 miles northwest of Bayreuth. It is famous for its dark beer, produced in more than 25 breweries and mostly exported. It also manufactures malt, linen, cotton, and plush, cement, machinery, iron, dyes, leather, bricks, and electrical apparatus. In the vicinity, to the east, on a high bluff 1390 feet above the sea, is the former fortress of Plassenburg, from 1398 to 1603 the residence of the margraves of Brandenburg-Kulmbach. It is used as a prison and for the archives of the Principality of Bayreuth. Pop., 1890, 7000, 1910, 10,731.

KULMBACH, or **CULMBACH**, kulm'bag, HANS VON. See SUSS, HANS.

KULPE, kul'pe, OSWALD (1862-1916). A German philosopher and psychologist. He was born at Candau and in 1879 graduated from the Gymnasium at Libau, where he taught for the next two years. He then studied in the universities of Leipzig, Berlin, Göttingen, and Dorpat, returning to Leipzig, where he took the degree of Ph.D. in 1887. He was made privat-docent in philosophy at Leipzig (1891), pro-

fessor of philosophy and æsthetics at Würzburg (1894), professor of philosophy at Bonn (1909), and professor of philosophy at Munich (1913). The leading expositor of the act-psychology of the Würzburg school, he made valuable contributions to epistemology and to the psychology of feeling and thought. His chief works are: *Grundriss der Psychologie* (1893; Eng. trans., 1895 and later); *Einleitung in die Philosophie* (1895; 6th ed., 1913; Eng. trans., 1897); *Philosophie der Gegenwart in Deutschland* (1902; 5th ed., 1911); *Immanuel Kant* (1907; 3d ed., 1912); *Psychologie und Medizin* (1912); *Die Realisierung* (1912).

KULTURKAMPF, kul-toor'kamp'f (Ger., culture war). The name given to the conflict between the Catholic church and the German government which started soon after the formation of the German Empire in 1870. One of the causes which retarded the unification of Germany was the religious division of the people. In the south German states, like Bavaria and Baden, and in the Rhine provinces, the prevailing religion is Catholic. It was feared that a united Germany would mean a Prussian Protestant Germany which might result in a persecution of the Catholic minority, and it was mainly for this reason that the southern Germans sympathized with Austria in the Seven Weeks' War.

Catholic prestige suffered heavily by the defeat of France and by the loss of the Pope's temporal power in 1870. The great wave of nationalism which spread over Germany as a result of unification found expression in bitter hostility to Catholicism as a foreign antinational influence. The Catholics, fearing persecution, organized a new political party, called the Centre, which won 63 seats in the first Imperial Parliament. What added fuel to the flame was the promulgation of the dogma of "papal infallibility" by the Vatican Council in 1870. Some of the German Catholics, among them the theologian Döllinger, refused to accept the new dogma; they were excommunicated and deprived of their positions as priests and teachers. These Old Catholics, as they called themselves, appealed to the government for protection and found a doughty champion in Bismarck, who now saw an opportunity to weaken the Catholic church, which he had always regarded as an enemy to German unity. To his support came the various Liberal and Radical parties who hated Catholicism as the strongest enemy of intellectual and religious freedom. It was the distinguished Liberal politician and scientist, Professor Rudolf Virchow, who first called it the Kulturkampf, or battle for civilization. The struggle between church and state then raged violently. In 1872 the Imperial government forbade teaching by religious orders and expelled the Jesuits from Germany. The May laws enacted (1873-75) by the Prussian legislature, the Landtag, gave the state great power over the education of the Catholic clergy by compelling all priests to pass the Gymnasium examination and to study for three years at a state university. To the civil authorities was given the control over the appointment and dismissal of priests. Religious orders were suppressed, and the church forbidden to interfere in political affairs. All Catholic seminaries were to be subject to state inspection. In 1875 the Imperial government made civil marriage compulsory. These laws

were directly the work of Falk, the Prussian Minister of Public Worship. A storm of protest spread all over Germany. The Pope declared the May laws null and void, and the German Catholics refused to obey them. Many of the bishops and lower clergy were fined or imprisoned and their places declared vacant, and at one time the Catholic organization in Prussia was almost annihilated. But the resistance of the faithful became all the stronger, and before long Bismarck had to face a rapidly growing Centre party, led by Ludwig Windthorst, an exceedingly able politician, who managed to embarrass the government at every point. In spite of the fact that Bismarck had declared that "he would not go to Canossa," he opened negotiations with the newly elected Pope Leo XIII. The growth of Socialism convinced Bismarck that the state had a greater enemy in this revolutionary movement than in the Conservative Catholic church. Besides, the Chancellor needed the support of the Centre in the great scheme of social legislation which he was then fathering. During the years 1878-87 most of the anti-clerical legislation was repealed. At present only the laws concerning civil marriage and the Jesuits are still in force, and in all probability the Jesuits will before long be allowed to reënter Germany, as Catholic opinion is insistent on that point.

The Kulturkampf lasted 15 years and resulted in consolidating the Catholics into a powerful political party which has since become the bulwark against German Socialism. For some years the government of the Empire has been controlled by the Catholic Centre and the Lutheran Conservative parties, who have formed a coalition known as the Blue Black Block. Consult: Hahn, *Geschichte des Kulturkampfes in Preussen* (Berlin, 1881), Wiesmann, *Geschichte des Kulturkampfes* (Leipzig, 1886); Robinson and Beard, *Development of Modern Europe*, vol. ii (Boston, 1908), C. D. Hazen, *Europe since 1815* (New York, 1910). See BISMARCK-SCHONHAUSEN, GERMANY, POLITICAL PARTIES, Germany.

KUM, kōm. The chief town of the province of the same name in Irak-Ajemi, Persia, situated 90 miles southwest of Teheran, on the route between that place and Ispahan (Map: Persia, D 5). It is one of the most famous burial places in Persia, and great numbers of pilgrims flock annually to the tomb of Fatima, a sister of Imam Riza, and the tombs of numerous other saints. Pop. (est.), 28,000. Kum is supposed to have been founded by the Arabs of the Abbaside period at the beginning of the ninth century and flourished until the invasion of the Afghans in the eighteenth century.

KUMAMOTO, kōm'mā-mō'tō. A prefectural city and strongly fortified garrison town of Japan, situated near the west coast of the island of Kiushu, on the river Shirakawa, and about 4 miles above its mouth (Map: Japan, B 7). It is well built and full of gardens. It was formerly the seat of the daimyos of Higo and was besieged by Saigo and his army during the Satsuma rebellion of 1877. It is distant only 25 miles from the volcanic peak Aso-yama and suffered from severe earthquakes in 1889. It is the terminus of the first section (170 miles) of the Trunk Railway of Kiushu, leading from Moji on the north to Kagoshima. The Buddhist temple of Hommyoji outside of the town is a popular place of pilgrimage. The

harbor is accessible to small craft. Pop., 1898, 61,463; 1903, 59,717; 1908, 61,233.

KUMĀRASAMBHAVA, kōm-mā'rā-sūm'-b'hū-vā (Skt., birth of Kumāra, or the war god). The name of one of the celebrated poems of the Hindus. Its author is Kalidasa (see KALIDASA), and its subject is the legendary history connected with the birth of Kumāra, or Kartikeya, the Hindu god of war. (See KĀRTIKĒYA.) It consists of 17 cantos, the first seven of which, devoted to the courtship and wedding of the god Siva and of Pārvati, parents of Kumāra, have been rendered into English verse by Griffith (London, 1879); there is an edition of the Sanskrit text with commentary published by the Nirṇaya Sagara Press (Bombay, 1893), and another (ib., 1898). Consult Macdonell, *History of Sanskrit Literature* (London, 1913).

KUMASSI, or **COOMASSIE**, kōm-mās'sē. The capital of the former negro Kingdom of Ashanti, in the British Gold Coast, in West Africa, situated lat. 6° 34' 50" N., 168 miles by rail north of the port of Sekondi on the Gulf of Guinea (Map: Africa, D 4). The town is built on a rock surrounded by marshy land, and its streets are well laid out. The chief structure is the fort, built in 1896. In the centre is a market place, used also as a parade ground and an exchange. Since the opening of the railway it has outstripped the seaboard towns. Pop., 1906, 6280; 1914, est., 8900. Kumassi was taken by the British in 1874. The town was again taken in 1896. It has an active trade with Central Africa. See ASHANTI; GOLD COAST.

KUMAUN, kū-mā'ūn. A division of the United Provinces, British India, consisting of the three districts of Naini Tal, Almora, and Garhwal (Map: India, D 3). Area, 13,725 square miles; pop., 1901, 1,207,030; 1911, 1,328,790. It lies chiefly on the south slope of the Himalayas, extending from Tibet to Tarai, comprising upward of 30 summits in that range, which vary in altitude from about 18,000 feet to nearly 26,000. With the exception of a belt from 2 to 15 miles broad, on its south frontier, the whole country is one mass of mountains and forests. Its principal rivers are the Pindar and Kailganga. The chief minerals are gold, copper, and lead. Throughout the south belt biennial crops of wheat, barley, oats, millet, peas, and beans are produced, with rice, cotton, indigo, sugar, ginger, and turmeric. The valuable forest tracts are under government supervision. Near the end of the eighteenth century Kumaun was seized by the Gurkhas. Their frequent raids into the neighbouring territory, however, resulted in the annexation of Kumaun by the British in 1815. The principal town is Naini Tal (pop., 15,164). Kumaun is celebrated for its numerous pilgrim resorts at the junction points of its rivers; the most important are Deoprayag and Vishnuprayag. It is growing rapidly, and the cool mountains have many resorts for refuge from the heat of India in summer.

KUMBHAKONAM, or **COMBACONUM**, kōm'bā-kō'nūm (Skt., jar edge, from *kumbha*, jar + *kōna*, edge). The capital of a district of the same name in Madras, British India, situated within the delta of the Cauvery River, about 30 miles from the sea, and 194 from Madras (Map: India, D 7). It contains a number of interesting temples, gateways, and a gate pyramid nearly 150 feet high, profusely adorned

with statuary in stucco. The large reservoir, which is supposed to be filled with water from the Ganges every 12 years by a subterranean passage 1200 miles long, attracts great numbers of pilgrims. The city, a centre of Brahmanism, is regarded as sacred by the natives. Brass, bronze, copper, and lead vessels, silk and cotton cloths, sugar, indigo, and pottery are the chief manufactures, but the silk and cotton industries are dying out. The English have established a small college here. Pop, 1891, 54,300; 1901, 59,763; 1911, 64,647.

KUMISS, or **KOUMISS**, kōō'mis (Tatar *kumiz*, fermented mares' milk). A fermented beverage originally made by the Tatars from mares' milk, but largely made in Europe and America from cows' milk. The method of preparation is not uniform. In the East mares' milk is placed in leathern vessels, with the addition of a portion of a previous brewing and a little yeast. The vessel is frequently shaken or beaten during the fermentation, which prevents the cream from rising and churns a part of the butter fat, which is removed. The fermentation requires from 30 to 48 hours. In the West it is prepared by adding sugar of milk to cows' milk, fermenting in open tanks, removing the casein and butter fat, and bottling during active fermentation. Kumiss has an acid and peculiar taste. It is diuretic and causes free perspiration. It is also credited with stimulant and tonic qualities, promoting the nutritive processes of the body. Kumiss is an invaluable article of diet in wasting diseases, in dyspepsia, in the diarrheas of children, and in convalescence from acute fevers. The stomach retains it when no other food can be taken. Each quart is estimated to contain four ounces of solid food and 1 to 3 per cent of alcohol. The following table gives the average composition of milk, kumiss, and kefir:

	Cows' milk	Kumiss	Kefir
Albuminoids (casein, etc.)	4	1	4
Butter fat	4	2	2
Sugar of milk	5	2½	2
Lactic acid		1	1
Alcohol		1½	1
Water and salts	87	92	90

See KEFIR

KÜMMEL, or **DOPPELKÜMMEL**, dōp'el-kūm'el (Ger., cumin). A liqueur made generally from highly rectified alcohol, flavored with cumin and caraway seeds. It is made chiefly at Riga and is much used in Russia, Germany, and the Eastern Archipelago. See LIQUEUR.

KÜMMEL, kīm'el, HENRY BARNARD (1867-). An American geologist. He was born at Milwaukee, Wis., and graduated from Beloit College in 1889, from Harvard University (A.M.) in 1892, and from the University of Chicago (Ph.D.) in 1895. He served as an assistant geologist on the New Jersey State Geological Survey in 1892-98, was assistant professor of physiography at the Lewis Institute, Chicago, in 1896-99; and became assistant State geologist of New Jersey in 1899 and State geologist in 1902. He was also appointed executive officer of the New Jersey Forest Commission (1905). From 1897 to 1901 he was associate editor of the *Journal of Geography*, and from 1908 to 1913 was president of the Asso-

ciation of American State Geologists. His papers deal with the paleozoic rocks, the stratigraphic clays, and the areal and economic geology of New Jersey.

KUMMER, kum'ēr, ERNST EDUARD (1810-93). A German mathematician, born at Sorau in Silesia. He studied theology and mathematics in Halle (1828-31) and received the doctor's degree in 1832. He then for 10 years taught mathematics in the Gymnasium at Liegnitz, where Kronecker (q.v.) was one of his pupils. From 1842 to 1855 Kummer was professor of mathematics at Breslau and from 1855 to 1884 at Berlin. From 1874 he also taught in the military academy of Berlin. He became a member of the Academy of Sciences in Berlin in 1855 and in 1857 was awarded the grand prize in mathematics by the Academy of Sciences in Paris, of which he became a foreign member in 1868. Kummer's chief contributions to mathematics were in the domains of the hypergeometric (Gaussian) series (Crelle's *Journal*, vol. xv), of cubic and biquadratic remainders (in Crelle, vols. xxiii and xxxii), and of complex numbers. The creation of the theory of ideal numbers (see NUMBER) is due to him, and to the theory of numbers in general he was an extensive contributor. He also devoted himself with success to the subject of pure geometry. In the *Allgemeine Theorie der Strahlensysteme* (Crelle's *Journal*, vol. lvii) he laid down the principles applicable to the so-called Kummer surfaces. These are surfaces of the fourth degree with 16 knot points (*Knotenpunkten*, corresponding to double points of a curve), and 16 singular tangent planes. The points and planes are so related that each of the 16 planes contains six of the points, and through each of the 16 points pass six of the planes. The system of these points and planes is called a Kummer configuration. The theory of these surfaces has been studied by Cayley, Reye, Lie, and others, and Borchardt and H. Weber have shown the relation of this theory to that of hyperelliptic (Abelian) functions. Besides the contributions already mentioned, Kummer's writings include an interesting memoir entitled *Ueber die Wirkung des Luftwiderstandes auf Körper von verschiedener Gestalt, insbesondere auf die Geschosse* (Abhandlungen der Berliner Akademie, 1875). For biographical sketch and list of works, consult the *Jahresbericht der deutschen Mathematiker-Vereinigung*, vol. iii (Berlin, 1894).

KUMMER, FRIEDRICH AUGUST (1797-1879). A German violoncellist, born in Meiningen. He studied the cello under Dotzauer in Dresden, but became an oboist of the King's Band in 1814. In 1817 he became cellist in the same organization. He made several European concert tours, but most of his life was spent in Dresden, in which city he died. He composed many concertos and fantasias for the cello and wrote an excellent *Violoncello School*.

KUMQUAT, kūm'kwōt (Cant. pron. of Chin. *kin keu*, golden orange), *Citrus japonica*. Small shrubby forms of the orange, seldom more than 6 feet high, natives of Cochinchina or China, and extensively cultivated in Japan, Florida, and California. They endure more frost than any other oranges and in cultivation grow 8 to 12 feet tall. The fruit is ovate, oblong, or spherical, and orange-colored. The rind of the kumquat is sweet and the juice acid. It is delicious and refreshing. The Chinese make an

excellent sweetmeat by preserving it in sugar, a practice which is being followed in the United States. The dwarf habit and the dense dark-green foliage make it popular for pot culture. In commercial plantations it is usually budded or grafted on *Poncirus trifoliata* or some sweet orange stock. For illustration, see Colored Plate of CITRUS FRUIT. Consult Hume, "The



KUMQUAT.

Kumquat," in *Florida Experiment Station, Bulletin* 65 (Lake City, 1903); Swingle, "A New Genus of Kumquat Oranges," in *Jour. Wash. Acad. Sci.*, 5 (1915), No. 5, pp. 165-176. The kumquats have recently been grouped by one authority into a new genus, *Fortunella*. The round form is classed as *Fortunella japonica*, and the oval form as *Fortunella margarita*.

KUMUNDUROS, *kōō-mōōn'dū-ras*, or **KOMUNDUROS**, ALEXANDROS (1814-83). A Greek statesman. He was born in Messenia and, after studying for a short time at Athens, returned to his home as a lawyer. He took part in the rising in Crete in 1841 and in 1843 was private secretary to General Grivas during the September revolution. He was chosen deputy in 1851 and was chosen President of the Chamber in 1855. In 1856 he became Minister of Finance in the Miaulis cabinet. For his part in the plot against King Otto (1862) the new revolutionary government under George I (q.v.) made him Minister of Justice. Under Kanaris he was twice (1864 and 1865) Minister of the Interior and in 1865 became for the first time President of the Ministry, being repeatedly reappointed to the position afterward (the last time in 1880). His politics changed from liberal (before 1862) to conservative. He was especially anxious to develop gradually the parliamentary power; but his foreign policy, whose aim was to resist Turkey and extend Greek power, was made impossible by the Congress of Constantinople, and he was forced to resign (1882). Consult Bikélas, *Coumoundouros* (Montpellier, 1884).

KUN'CHINJIN'GA. A peak of the Himalayas, one of the highest mountains in the world, perhaps exceeded only by Mount Everest and Mount Godwin-Austen or Dapsang (Map: India, F 3). It is situated at the northeast corner of Nepal, 60 miles east of Mount Everest. Its height is 28,156 feet.

KUND, *kunt*, RICHARD (1852-1904). A German soldier and explorer, born at Zielenzig in the Neumark. In 1884 he went to Africa in the employ of the African Company. With Tappenbeck he proceeded inland to Leopoldville; at the close of the year 1885 he came to the Mfini and marked its upper course. A few weeks afterward he was severely wounded in a battle with

the natives. In 1887 he was again sent to Africa to explore the southern part of the Kamerun country. On this trip he discovered the Nightingale Falls, but hostilities with the natives soon broke out. Both Kund and Tappenbeck were severely wounded. Ill health forced Kund to return to Germany in 1890. The next three years he spent in sea travel, to rebuild his health, and visited East Africa and the eastern part of India.

KUNDT, *kunt*, AUGUST (1838-94). A German physicist, born at Schwerin in Mecklenburg. He became privatdocent at the University of Berlin in 1866. Two years later he became professor of physics at the Zurich Polytechnicum; in 1870 he went to Würzburg, in 1872 to Strassburg, when that university was being organized, and in 1888 to Berlin, succeeding Helmholtz in the chair of experimental physics. Kundt devoted himself especially to researches on sound and discovered the method of dust figures, which bears his name, for determining the velocity of sound in gases. In addition to investigations in acoustics Kundt also studied the phenomena of anomalous dispersion of light in an elaborate series of experiments. He showed that in certain substances the order of the colors in the spectrum is reversed, notably certain liquids, such as eyanine, mauve, aniline, and aniline blue. The peculiar phenomena of dispersion exhibited by the films of metals was also carefully investigated in an elaborate research occupying over two years. Other notable work was the study of the conduction of heat and friction of gases, the electrical properties of crystals, the rotation of the plane of polarization in gases, and the optical characteristics of metals. These and other researches will be found for the most part in *Poggendorffs Annalen*, *Wiedemanns Annalen*, the *Proceedings of the Berlin Academy of Sciences*, and the *Philosophical Magazine*. His *Vorlesungen über Experimentalphysik*, edited by K. Scheel, were published at Brunswick in 1903. Consult a memorial by Werner von Siemens, in *Königliche preussische Akademie der Wissenschaften, Abhandlungen*, vol. ii (Berlin, 1893).

KUNENE, *kōō-nā'ne*, or **CUNENE**. A river rising in the Ovimbundu Mountains, Benguela, Angola (Map: Congo, B 6). After a southerly course during which it receives several affluents, the chief of which is the Chitanda, it flows westward, marking the boundary between German Southwest Africa and Angola, and enters the Atlantic Ocean in lat. 17° 20' S., after a flow of 720 miles. In its upper course it has a large volume of water throughout the year, but in its lower course, which is through a desert region, it is so completely dried up during the dry season that, after it had been first discovered in 1824, it could not be found again until 1854, when it was visited during the wet season. This phenomenon is due partly to the fact that the river throws off several branches, which flow southeastward into Lake Etosa, a shallow lagoon or marsh situated in the desert of Damaraland, and partly to the diminution of supply at the sources. In the wet season some of the upper waters find a passage to the Zambezi through the Kubango, which drains Etosa. The Kunene was probably at an earlier epoch an affluent of the Zambezi system. The regions between Lake Etosa and the Kubango and between the Kubango and the Zambezi have not been thoroughly explored.

KUNERSDORF, kōō'nērs-dōrf. A village in the Province of Brandenburg, Prussia, 4 miles northeast of Frankfurt-on-the-Oder. It is noted as the scene of one of the most remarkable battles of the Seven Years' War, fought on Aug 12, 1759, in which Frederick the Great was completely defeated by a combined attack of Russians under Soltikov and Austrians under Loudon. The Prussians lost 18,500 men, with almost all their artillery and baggage, while their opponents lost 16,900 men.

KUNG TS'IN (or **CH'IN**) **WANG**, kōōng tsān wāng (1832-98). A Chinese prince and statesman, sixth son of the Emperor Tao-kwang (1796-1820), and brother of the Emperor Hien- (or Hsien-) fung, who fled from Peking at the approach of the French and British allies in 1860 and left Prince Kung to make the best terms with them he could. These were embodied in the treaty signed at Peking, Oct. 24, 1860, opening several new ports and providing for diplomatic representatives at Peking. A new department for foreign affairs was also provided for—the Tsung-li Yamen—and, in 1861, Prince Kung was appointed its President. A few months later Hien-fung died at Jehol and was succeeded by his son, a child of five. Prince Kung and the Empress and Empress Dowager became regents, and the Prince also was appointed to the presidency of the Imperial Clan Court. His position was one of great difficulty; practically every reform he attempted was violently opposed by the Conservative party forming his council, all of whom were averse to Western intrusion and ideas, and he was defeated and reprimanded many times, but was always recalled to power after a short lapse of time. In 1884 his desire for conciliation in the troubles with France led to his dismissal from office. He gave up his hereditary first class principedom and remained in retirement until 1894, when he was recalled to be President of the Tsung-li Yamen, now the Waichiaopu, and ordered to assist Li Hung-chang in the Korean difficulty with Japan. He was also placed on the Grand Council at the special request of the Empress Dowager. It was unfortunate for China and the world that Prince Kung died just before the reform movement of 1898 began. He was a statesman of ability and experience, commanded the respect of all, and was the only one able to keep peace between the opposing factions of the Manchus and the court. He was fairly progressive, not opposed to moderate reforms, and could have guided the Emperor Kuang-hsü, who relied upon his help, into safe paths. Had he lived, the reform movement might have been successful, and the Empress Dowager's coup d'état and the Boxer rebellion prevented.

KUNGU (kōōng'gōō) **CAKE**. A cake eaten by the natives of the Lake Nyassa region in Africa, and made from the pressed bodies of a dipterous aquatic insect of the genus *Cortethra*. Cf. **AHUATLE**; **KOO-CHAH-BEE**.

KUNGUR, kōōng-gōōr'. The chief town of a district in the Government of Perm, Russia, on the rivers Sylva and Iren, 58 miles southeast of the city of Perm (Map: Russia, J 3). Tanning and the manufacture of leather goods, shoes, gloves, mittens, and a kind of leather overcoats are its principal industries. A considerable trade in these articles as well as in cereals, flax, and tallow is carried on. Pop., 1910, 19,638. Kungur was founded in 1647.

KUNIGUNDE, kōō'nē-gun'de, SAINT (?-

c.1039). Wife of the Emperor Henry II (q.v.) and daughter of Count Siegfried of Luxemburg. According to legend Henry and Kunigunde made a vow to live as if unmarried and hence won the title of saints, but this has been disproved. According to another legend, Kunigunde's reputation having been unjustly assailed, she vindicated herself by walking barefooted over hot plowshares. After the death of her husband, in 1024, she retired to the convent of Kauffungen, near Cassel, which she had founded. She spent the remainder of her days in pious works and was canonized in 1200. Her day is March 3, but the year of her death is uncertain. Consult Hirsch, *Jahrbucher des deutschen Reichs unter Heinrich II* (3 vols., Berlin, 1862-75), and Tousseint, *Geschichte der heiligen Kunigunde* (Paderborn, 1901).

KUN-LUN, kōōn'loōn'. A mountain system of Central Asia. See **KUEN-LUN**.

KUNNOJ', or **KUNNOUJ'**. See **KANAUJ**.

KUNTZ, kunt, **KARL SIGISMUND** (1788-1850). A German botanist, born in Leipzig. In 1806 he entered upon a commercial career in Berlin, but through the help of Alexander von Humboldt (q.v.) he was enabled to follow the study of botany; and in 1813 he went to Paris to classify and describe the plants collected in America by Humboldt and Bonpland. His *Synopsis* of this herbarium appeared in 1822-25. He returned to Berlin in 1819 after visits to England and Switzerland, was made professor of botany in the University of Berlin and vice president of the Botanical Garden, and became a member of the Berlin Academy of Sciences in 1829. His works include: *Flora Berolinensis* (1813); *Nova Genera et Species Plantarum* (1815-28), descriptive of the results of Humboldt's journeys, *Les Mimosées et autres plantes légumineuses du nouveau continent* (1819-24); *Les graminées de l'Amérique du Sud* (1825-33); *Handbuch der Botanik* (1831), *Lehrbuch der Botanik* (1847), and a work on monocotyledons entitled *Enumeratio Plantarum Omnium hucusque Cognitarum, Secundum Familias Naturales Disposita* (1833-50).

KUNTZE, kōōn'tse, **JOHANNES EMIL** (1824-94). A German jurist, born at Grimma. He studied law at the University of Leipzig. In 1856 he was appointed professor there. His most important publications are: *Die Obligation und Singularsuccession des römischen und heutigen Rechts* (1856), *Der Wendepunkt der Rechtswissenschaft* (1856), *Das Jus Respondendi in unserer Zeit* (1858), *Deutsches Wechselrecht* (1862), *Prolegomena zur Geschichte Roms* (1882), *Die deutschen Städtegrundungen* (1891), *Zur Geschichte des römischen Pfandrechts* (1893), *Der Cervus Fracturarius des römischen Rechts* (1880).

KUNWALD, kōōn'vāld, **ERNST** (1868-). An Austrian musical conductor, born at Vienna. In 1885 he matriculated at the University of Vienna as a student of law and completed the course in 1891, receiving the doctor's degree. But at the same time he studied music assiduously, piano with Leschetizky and Epstein (1882-86), composition with Grädener (1884-88). In 1893-94 he studied piano and composition with Jadassohn at the Leipzig Conservatory and also acted as chorus master of the Leipzig Opera. In 1895 he went to Rostock as conductor of lighter operas and in 1897 to Sondershausen as regular operatic conductor. From 1898 to 1907 he filled similar positions in Essen, Halle,

Madrid, Frankfort, Berlin (Kroll's Opera), and Nuremberg. In 1907 he was appointed conductor of the Berlin Philharmonic Orchestra, where he remained till 1912. He was then called to Cincinnati as conductor of the local Symphony Orchestra. Under his leadership this orchestra rose to a position of prime importance among the great symphony organizations of the United States.

KUNZ, kúnz, GEORGE FREDERICK (1856-). An American mineralogist and gem expert, born in New York City. He became gem expert for Tiffany & Co., of New York, jewelers, and after 1879 was third vice president of the firm. From 1883 to 1909 he was special agent of the United States Geological Survey. In important capacities related to his profession he was connected with the expositions held in Paris (1889), Kimberley (1892), Chicago (1893), Atlanta (1895), Omaha (1898), Paris (1900), St. Louis (1904). In 1892-98 he investigated American pearls for the United States Fish Commission, and he had charge of precious stones for the twelfth census. He was made an Officer of the French Legion of Honor and received many other decorations, became honorary curator of precious stones in the American Museum of Natural History, and was vice president of the American Institute of Mining Engineers in 1899-1901. In addition he was interested in various civic undertakings, becoming president of the American Scenic and Historic Preservation Society. He published *The Gems and Precious Stones of North America* (1890), *The Book of the Pearl*, with C. H. Stevenson (1908), *The Curious Lore of Precious Stones* (1913), and he contributed to periodicals more than 200 articles on folklore, meteorites, minerals, and gems.

KUNZE, kún'ze, JOHN CHRISTOPHER (1744-1807). An American Lutheran clergyman and scholar. He was born at Artern, Saxony, was educated for the Church at Leipzig, and in 1770 went to Philadelphia as associate pastor of St. Michael's and Zion Lutheran congregations. In 1780 he added to his duties those of professor of Oriental languages in the University of Pennsylvania. From 1784 to 1787 and from 1792 to 1799 he held a like chair in Columbia, having removed to a New York charge in 1784. Kunze was an excellent Hebraist and a skilled mathematician, an advocate of English education for German children, and publisher of the first *Hymn and Prayer Book for Lutheran Churches* in English (1795). He also wrote on the history of the Lutheran church and did much to introduce English into the German pulpits in America.

KUNZITE. See **SPODUMENE**.

KUOPIO, ku-óp'i-ô. A government in the eastern part of Finland, Russia (Map: Russia, C 2). Area, about 16,498 square miles, of which over 16 per cent is lakes. The northern part is covered with dense pine forests, and the soil is mostly unfitted for agriculture. The climate is extremely severe, the average annual temperature being about 36°. Agriculture is in a primitive state, but dairying is carried on extensively. The exploitation of the forests is also an important industry, considerable quantities of iron are mined, and there are engineering, iron and chemical works, saw and paper mills, and distilleries in the province. Pop., 1912, 327,573. Capital, Kuopio.

KUOPIO. The capital of the government of the same name, in Finland, Russia, situated on

the west shore of Kalla Lake, 225 miles northwest of St. Petersburg (Map: Russia, C 2). It is regularly built and has a fine park and is an educational centre of some importance. It is the seat of a bishop and contains a modern cathedral. Pop., 1912, 15,845.

KUPRULI, or **KUPRILI**. See **KIUPRILI**.

KUR, kōōr, or **KURA**, kōō'rā (Lat. *Cyrus*). The largest river in Transcaucasia, Russia, rising in the Territory of Kars, at an altitude of about 6600 feet, and flowing in a generally southeasterly direction past the city of Tiflis towards the Caspian Sea, into which it falls after a course of 830 miles (Map: Russia, G 6). It flows chiefly through a mountainous region and drains an area estimated at 60,000 square miles. The Aras, which prior to 1896 discharged into the Kur a short distance from its mouth, has in great part recovered its old estuary in the Kizil Agatch Bay. Despite its turbulent course the Kur is navigable for steamers for about 130 miles from its mouth.

KURA, kōō'rā, LAKE. See **CHAD**.

KURANDA, kōō-rān'dā, IGNAZ (1812-84). An Austrian publicist and politician, born in Prague, the son of a Jewish bookseller. After journalistic work in Vienna, Leipzig, Stuttgart, and Paris, he went to Brussels, where in 1841 he founded *Die Grenzboten*, a Liberal political and literary weekly. In 1842 he transferred its editorial office to Leipzig, where it subsequently passed into the hands of Gustav Freytag and Julian Schmidt, after Kuranda had returned to Austria and been elected to the Frankfort Parliament in 1848. He settled in Vienna and founded the *Ostdeutsche Post*, a political journal, which ceased to exist in 1866. In 1867 he was elected to the Reichsrat and became one of its most prominent Liberal leaders. He wrote *Belgien in seiner Revolution* (1846).

KURBSKI, kōōrp'skē, ANDREI MIKHAILOVITCH, PRINCE (1528-88). A Russian soldier and writer. He was a military commander under Ivan the Terrible and took part in the siege of Kazan. Being unfortunate in war, he was forced to take refuge in Lithuania, where he entered the service of Sigismund August, the Czar's enemy. At the same time he studied Latin with a view to propagating the Orthodox faith among the Poles. Of much historical interest is his controversial correspondence (1563-79)—half a dozen letters at told—with Ivan, whom he tried to defeat by erudition, but the Czar was gifted with superior talent for spontaneous vituperation. Kurbski, however, had his revenge in the *Life* he wrote of Ivan the Terrible, the first history of his kind in Russia.

KURDISH, kōōr'dish. The language spoken by the Kurds inhabiting Kurdistan, Persia, Afghanistan, and Baluchistan. The number of persons speaking Kurdish is probably not far from 2,300,000. In character the language is Iranian, but it contains many loan words from Arabic, Persian, Turkish, and other neighboring tongues. The old inflections of the Iranian have been given up, and, like the Persian, Afghan, and Baluchi, or even like English, the language is now synthetic. It is divided into several dialects, of which the most important are Luri, Kirmanshahi, Gurani, Mukri, and Zaza, which differ from each other so much as to be sometimes mutually unintelligible. The Kurdish literature is chiefly oral and is especially rich in ballads and lyrics as well as in fairy stories and beast fables. Epics are less developed, and,

as is usual in unwritten literatures, prose is almost entirely lacking.

Bibliography. Garzoni, *Grammatica e vocabulario della lingua kurda* (Rome, 1787); Rich, *Narrative of a Residence in Koordistan* (London, 1837); Lerch, *Forschungen über die Kurden und die iranischen Nordchaldaer* (St. Petersburg, 1857-58); Jaba, *Recueil des notices et récits kourdes* (ib., 1866); Prym and Socin, *Kurdische Sammlungen* (ib., 1870-90); Jaba, *Dictionnaire kurde-français* (ib., 1879); Justi, *Kurdische Grammatik* (ib., 1880); Socin, "Die Sprache der Kurden," in Geiger and Kuhn, *Grundriss der iranischen Philologie*, vol. i (Strassburg, 1895 et seq.); Makas, *Kurdische Studien* (Heidelberg, 1901); Mann, "Kurdisch-persische Forschungen: I. Teil, einer von 1901 bis 1903 und 1906 bis 1907, in Persien und asiatischen Türkei ausgeführten Forschungsreise (2 vols., Berlin, 1906-00).

KURDISTAN, kūr'dê-stân' (Pers., land of the Kurds). The name of a region south of Armenia, in west Asia, extending in a northwest and southeast direction through the northeastern part of the Turkish dominions and the northwestern part of Persia, from about lat. 34° to 39° N. and from about long. 38° to 48° E. (Map: Turkey in Asia, D 2 and E 3). It reaches to Malatia in the west, borders on the Tigris in the south, and embraces Lake Urmiah in the east. On the northern borders is Lake Van. Area, about 56,000 square miles. The region is very mountainous. West of Lake Van there are distinguished three principal and a number of secondary ranges, inclosing high, fertile valleys and forming one of the most picturesque parts of west Asia. As we approach the Persian frontier, the country is still more mountainous, the mountain masses intersecting each other in every direction and having an average elevation of not less than 5,000 feet, with single peaks rising to greater heights. In the Persian part of Kurdistan the ranges decrease in size, and the proportion of open country is much larger. Along the Tigris extends a level plain. Kurdistan belongs to the basins of the Tigris and the Euphrates, being traversed by numerous streams coursing south from the Armenian highlands. Among the rivers which descend from the mountains of Kurdistan to join the Tigris are the Greater and Lesser Zab. The climate is hot and dry in the summer and rather severe in the winter. Cereals and southern fruits are produced in abundance. The region is inhabited mainly by Kurds (q.v.). Turkish Kurdistan is included mainly in the vilayets of Diarbekir, Mamuret-ul-Aziz, Bitlis, and Van. The part belonging to Persia has a relatively small area. In the extreme south of this portion is the town of Kirmanshah. The population is probably not far from 2,500,000. Kurdistan is a part of ancient Assyria.

KURDS, kōrdz, or **KOORDS**. A people after whom certain parts of Turkey in Asia and Persia have received the name of Kurdistan, belonging both by language and physical characters to the Iranian branch of the white race. Physically they are medium-statured, dark, long-headed, and, where not influenced by civilization, harsh-featured and of savage aspect. Their hospitality and other good qualities, including a characteristic sense of honor, have been overclouded in the public mind by their reputation as predatory thieves and agents of Turkish oppression. The vast majority of the Kurds, who

number about 2,300,000, profess Islam, which has brought them into antagonism with the Armenians and other Christian peoples of their environment. The history of the Kurds dates back to the earliest times of which we have record. After the fall of the Assyrian Empire they fused with the Medes and ultimately became Aryanized. They were subjugated by the Macedonians and the Parthians. Under the rule of the Caliphate of Bagdad the Kurds continually revolted. In the ninth century their strongest fortress, Sermaj, was captured along with the whole province of Shahrizor. The twelfth century marks the pinnacle of their power, when they held sway over the territory from Khorasan (q.v.) to Egypt. During the occupation of this region by the Mongols and Tatars, the Kurds withdrew to the Kurdistān Mountains and were only nominally ruled by their successors. For later history, see **TURKEY**. Consult: Millingen, *Wild Life among the Koords* (London, 1870); Cragh, *Armenians, Koords, and Turks* (ib., 1880); Houssaye, *Les races humaines de la Perse* (Paris, 1888); Chantre, "Les Kurdes," in the *Bulletins de la Société d'Anthropologie de Lyon* (Lyons, 1889); id., *Recherches anthropologiques dans l'Asie occidentale* (Paris, 1898); H. F. B. Lynch, *Armenia* (London, 1901); E. Percy, *Highlands of Asiatic Turkey* (ib., 1906); E. B. Soane, *To Kurdistan in Disguise* (Boston, 1914).

KÜRENBERG, kü'ri:n-bērk, DER VON, or DER KURENBERGER. A German poet of the twelfth century, of a knightly race settled near Linz in Upper Austria. His 15 love songs, dating from about 1150-70, were edited by Wackernagel (1827) in Haupt, *Des Minnesangs Frühling* (Leipzig, 1888), and in Bartsch, *Deutsche Liederdichter* (Stuttgart, 1893). As they are in part composed in the Nibelungen stanza, some literary historians, as Pfeiffer and Bartsch, have connected them with the authorship of the *Nibelungenlied*, the original version. Consult: Pfeiffer, *Die Nibelungen* (Stuttgart, 1874); Eugen Joseph, *Die Frühzeit des deutschen Minnesangs, Quellen und Forschungen*, part lxxix (Strassburg, 1886); Böhning, *Das Kurenberger Liederbuch* (Arnstadt, 1901-02).

KURG, kōörg. A province of British India. See **COORG**.

KURGANS, kōōr'ganz. The name applied to ancient sepulchres and grave mounds found in various regions of European Russia and Siberia. The dolichocephalic type of the Transbaikial Kurgans is thought by some to be related to the Hakkas, whom they regard as the best modern representatives of the primitive Chinese.

KURIA MURIA (kōō'rē-ā mōō'rē-ā) **ISLANDS**. A group of five islands situated off the south coast of Arabia (Map: Turkey in Asia, H 8). They aggregate 29 square miles in area, are barren, are inhabited by a few families of Arabs, and contain deposits of guano. They were ceded to England by the Sultan of Oman in 1854 as a landing place for the Red Sea telegraph cable.

KURILE (kōō'rīl) **ISLANDS** (from Russ. *kuriti*, to smoke; so called from the active volcanoes in the group; in Japanese, *Chishima*, thousand isles). A chain of about 32 islands of volcanic origin in the North Pacific Ocean, belonging to Japan and lying between Kamchatka and Yezo (Map: Japan, A 4 to E 2). Some of the peaks, as Chikuratski (6400 feet), Blakiston (4400), Matua (5120), Milne (5650),

are rich in forests. They form one of the 11 provinces of what is known as the Hokkaido, the other 10 being in the island of Yezo. Area, 6153 square miles, coast line, 1496 miles; pop. (est.), 3000. The chief exports are fish and furs. The islands were discovered by the Dutch navigator De Vries, and occupied by Cossacks in 1766, though from ancient times claimed by Japan. After a long diplomatic strife Japan obtained in 1875 those held by Russia in exchange for the southern half of Sakhalin. The principal islands are Itorup, Kunashiri, Paramushiri, and Shumshu. In 1899 a Japanese commercial company began the settlement and commercial development of these islands.

KURINO, kūr'no, SHINCHIRO, VISCOUNT (1862-). A Japanese diplomat, of a Fukuoka samurai family. After graduating from the Harvard Law School he entered the Japanese diplomatic service as Commissioner of the Foreign Office in 1881, becoming vice chief of the Investigation Bureau in 1886. In 1894-96 he was Minister to the United States and secured in 1894 the signature of the treaty under which the United States gave up the principle of extraterritoriality as applied to Japan. Kurino was Minister at Rome (1896), at Paris (1897-1901), and at St. Petersburg up to the eve of the Russo-Japanese War, and from 1906 to 1912 he was the first Japanese Ambassador to France.

KURISCHES HAF, kūr'ish-ēs hāf. An extensive lagoon separated from the Baltic Sea by a bar of sand called the Kurische Nehrung, from 1 to 2 miles in width. The lagoon extends nearly 60 miles along the coast of East Prussia, from Labiau to Memel, where it is connected with the Baltic by the Memel Deep, a channel about 1000 feet wide and 12 feet deep (Map: Germany, J 1). Its greatest breadth at the south extremity is about 28 miles, but its average breadth is not over 14 miles. The water of the Kurisches Haff is fresh, as it receives a number of streams, among which is the large river Niemen, or Memel. The water, which is shallow and silting rapidly, does not permit of much use of the lagoon as a highway of commerce.

KURLAND, kūr'lānt. See COURLAND.

KURNAH, kūr'nā, or **GURNAH**. An Egyptian village on the west bank of the Nile, opposite Karnak, in about lat. 25° 50' N. In the vicinity stands the temple built by Seti I in honor of Ammon of Thebes and of Seti's father, Ramses I. Some of the reliefs and inscriptions were added, after the death of Seti, by his son, Ramses II. Originally the temple was approached through two successive courts, but only traces of these are left. A portico, its roof supported by eight lofty columns, forms the façade of the temple. The rear wall of the portico is covered with reliefs and is pierced by three doors. The central door gives access to a hypostyle hall with six sculptured columns, into which three chambers open on either side. The walls of the hall and of the chamber are adorned with reliefs representing Seti I and Ramses II. A door at the upper end of the hall leads to the sanctuary, on the walls of which Seti I is depicted offering incense before the sacred ram of Ammon. The sanctuary contains four square pillars and is flanked by several chambers. The door on the right of the portico leads to the hall of Ramses II, which originally contained 10 columns, but only traces of them

remain. The door on the left of the portico gives entrance to a vestibule, into which open three chambers, the walls of which are richly decorated with reliefs. A door to the left of the vestibule opens upon a narrow corridor leading to several rooms in the rear of the building. One of the rooms contains reliefs executed in the time of Ramses II; the rest are in ruins. Consult Wilkinson, *Topography of Thebes* (London, 1835), and Mariette, *Voyage dans la Haute-Egypte* (2d ed., Paris, 1893). See also THEBES.

KÜRNBERGER, kūr'n'berg-ēr, FERDINAND (1823-79). A German novelist and critic, born and educated in Vienna. His literary reputation is largely due to the novel *Der Amerikamüde* (1856), which describes the experiences in America of Nikolaus Lenau (q.v.) under the name of Moorfeld and is distinctly unflattering to American life. His other novels include *Der Haustyrann* (1876), the *Novellen* (1861-62 and 1878), and the posthumous collection published by Lauser in 1893. He wrote three dramas, *Catiline* (1855), *Firdusi* (1865), and *Quintin Meiss*. His critical and political writings include *Litterarische Herzenssachen* (1877), which shows a wide knowledge of European literature. Consult Mulfinger, *Kürnbergers Roman der Amerikamüde* (Philadelphia, 1903).

KURODA, kūr-rō'dā, KIYOTAKA, COUNT (c.1835-1900). A Japanese statesman, born in Satsuma. He took an active part in the fighting of 1868 and completed the subjugation of the rebels in the naval operations at Hakodate (q.v.). Later he did much to raise the standard of education of the women of Japan. Becoming Minister of the Department for the Colonization and Development of the Hokkaido—the island of Yezo, plus the Kuriles—he visited the United States and secured a staff of scientific men, who under his direction did much towards developing the country. Out of the survey of Yezo grew the geological survey of Japan, first begun by Raphael Pumpelly (q.v.) and carried on by Prof. Benjamin Smith Lyman (q.v.). In 1874 Kuroda was appointed an Imperial Councillor and in 1876 went to Korea and made a treaty of peace and commerce. In 1877 he commanded a division of the Imperial troops in suppressing the Satsuma rebellion. In 1889, when the constitution was promulgated, he was Premier of the Empire. At the time of his death in 1900 he was president of the Privy Council.

KUROKI, kūr-rō'kē, TAMESADA, COUNT (1844-). A Japanese soldier, born at Kago-hima in the Province of Satsuma. He fought in the Restoration, entered the Imperial army as captain in 1871, took part on the Imperialist side in the Satsuma rebellion in 1877, and in the Chino-Japanese War he distinguished himself at Wei-hai-wei in February, 1895. He attained the rank of general in 1903. As commander of the First Army during the Russo-Japanese War of 1904-05, he overran Korea in the early months of the war and on May 1, in the battle of the Yalu, gained the first of the brilliant series of Japanese victories on land. He took part in all the great battles of the war, Liao Yang, Shaho, and Mukden. In July, 1906, he was appointed extraordinary inspector general of the army and later became general of the second reserve. For his military services he was created Baron after the war with China and Count after the war with Russia. See RUSSO-JAPANESE WAR.

KUROPATKIN, kūr'pāt'k'ēn. ALEXEI NIKOLAYEVITCH (1848—). A Russian general. He entered the army at 16, fought with distinction in Turkestan in 1866-68, and, after passing through the academy of the general staff, fought as a volunteer in Algeria (1874) and in the following year was diplomatic agent at Kashgar. During a campaign in Central Asia (1876) he attracted the notice of General Skobeliév, as whose chief of staff he participated in the Russo-Turkish War of 1877-78. From 1879 to 1883 he commanded the Turkestan rifle brigade, distinguishing himself during the campaign against the Tekke-Turkomans in 1880-81 by a forced march of 600 miles to Geok-Tepe and the storming of that important fortress. In 1890 he became lieutenant general and Governor of the Transcaspien territories and in 1898 Minister of War. In February of 1904 he was ordered to Manchuria to assume supreme command in the East, in a war to which as Minister he was strongly opposed on account of Russia's unpreparedness. (See RUSSO-JAPANESE WAR) After the battle of Mukden (March, 1905) he was relieved of the chief command in favor of General Linievitch, whom at his own request he succeeded in command of the first Manchurian army. He wrote accounts of the Russo-Turkish War (1879, 1884), of the conquest of the Turkomans (1899), and of the Russo-Japanese War (1906), the last of which was suppressed by the Russian government. For his all-important connection with the Far-Eastern War, consult Story, *The Campaign with Kuropatkin* (London, 1904), and, especially, Kuropatkin's own account, *The Russian Army and the Japanese War* (New York, 1909).

KURO SHIO, kūr'ō shē'ō (Jap., black tide). A great current of the Pacific Ocean, washing the southeastern shores of Asia. It has its source in the north equatorial current, which, flowing westward, is partially deflected by the Philippine Islands and Formosa and takes a northerly course into the Eastern Sea. Here the Kuro Shio, under the influence of the southwesterly monsoon, bears off to the northeast past the shores of the Japan Archipelago, gradually taking a more easterly direction and merging with the drift that crosses the Pacific between lat. 40° and 50° N. The color of the stream is a deep blue. Its temperature is 5° to 12° above the normal temperature of the sea at a given latitude, and its velocity varies from 1 to 3.5 miles per hour. The rate of flow varies with the seasons, during the late spring and summer months it is accelerated by the southwest monsoons, while the prevailing northeasterlies that blow from September to March retard or wholly obliterate the current. A branch of the Kuro Shio passes into the Yellow Sea and a second branch into the Japan Sea; but it sends off no arm northward through the Bering Sea, as has been commonly supposed, the northerly current of the Bering Sea being due to local conditions. It does not affect the climate of the Pacific coast of North America. Consult Wild, *Thalassa* (London, 1877), and *Report of the United States Coast Survey for 1880* (Washington, 1882).

KURUTCHKIN, kūr-rōch'kin, VASILII STEPANOVITCH (1831-75). A Russian satirical poet and journalist, born in St. Petersburg. He served in the army and later in the Bureau of Transportation and as early as 1855 attracted attention with his translations of Béranger. In

1859 he launched the first Russian comic journal, which he called *Iskra* (The Spark), which exercised great influence in molding popular social opinion. His collected works appeared in St. Petersburg in 1897.

KURACHÉE, kūr-rā'chē. A district and town of British India. See KARACHI.

KÜRSCHNER, kūrsh'nēr, JOSEPH (1853-1902) A German author and editor, born at Gotha. At first engaged in mechanical engineering, he afterward studied at the University of Leipzig. Besides several publications connected with the history of the German theatre, he edited successively in Berlin and Stuttgart a considerable number of literary monthlies, yearbooks, and other periodicals. He was also editor of the *Deutsche Nationalliteratur*, a critical collection in 222 volumes of much that is best in German literature from the very beginning down to the middle of the nineteenth century, but was most widely known as the editor, after 1883, of the *Allgemeiner deutscher Literaturkalender* (Stuttgart, 1879 et seq.), an annual biographical record of all German authors and their works. His works include: *Konrad Ekhof* (1877), *Tagebuchblätter* (1876), *Heil Kaiser dir!* (1897); *Frau Muska* (1898), *China* (1901); *Kaiser Wilhelm II. als Soldat und Seemann* (1902).

KURSK, kūrsk. A government of central Russia, adjoining Little Russia. Area, about 17,937 square miles (Map Russia, E 4). The surface is only slightly elevated and is intersected by numerous river valleys. It is well watered, and its soil is very fertile. The climate is moderate. Agriculture, the chief occupation of the inhabitants, is carried on in a very crude way. Considerable quantities of grain are exported. Rye, wheat, barley, buckwheat, and oats are the chief cereals, potatoes are grown for distilling, and beetroot is also raised to some extent. The manufacturing industries are only slightly developed, the chief industrial establishments are sugar and flour mills, distilleries, and oil presses. The house industries of the district are very varied, ranging from icons and toys to boots and baskets, but they yield little beyond what is necessary for domestic consumption. Pop., 1912, 3,133,500. Capital, Kursk.

KURSK. The capital of the Russian government of the same name, situated on the small river Kur and on the railway line from Moscow to Kharkov, 280 miles south-southwest of the former town (Map: Russia, E 4). It is built largely of wood. It has a cathedral and two monasteries, that of the Annunciation containing a much venerated icon of the Virgin, an object of much pilgrimage, especially on the first Friday after Whitsunday, when it is escorted to a neighboring monastery by thousands. A great fair is also held here each year. Its educational institutions comprise two Gymnasias, a seminary for teachers and for priests, and a school of geodesy. Tanneries, candle, soap, and tobacco factories, flour mills, distilleries, and a considerable trade in grain, hemp, cattle, and hides, furnish occupation to the larger part of the inhabitants of the town. Pop., 1912, 83,330. Kursk was founded in the ninth century and was pillaged by the Tatars in 1240.

KURTZ, kūrts, JOHANN HEINRICH (1809-90). A German theologian, born at Montjoie in the governmental district of Aix-la-Chapelle.

He studied at the universities of Halle and Bonn. From 1850 to 1870 he was professor of Church history at the University of Dorpat. His works include: *Lehrbuch der heiligen Geschichte* (1843); *Die christliche Religionslehre* (1844); *Lehrbuch der Kirchengeschichte* (1849); *Der Brief an die Hebraer erklärt* (1869).

KURZ, kurts, HEINRICH (1805-73). A German critic and historian of literature, born in Paris and educated at Leipzig and Paris. He studied Chinese under Abel Rémusat and published many articles on Chinese literature, such as *Buchdruckerei und Buchhandel in China* (1828), *Ueber die neuere Poesie der Chinesen* (1828), and *Mémoire sur l'état politique et religieux de la Chine, 2300 ans avant notre ère* (1830). He became a member of the Asiatic Society, editor of the *Journal Asiatique*, and a collaborator on the Chinese dictionary which had been begun by Basile. The revolution of July, 1830, called him back to Germany, and in Munich he became docent of Chinese and editor of the periodical *Bayerns Deputiertenkammer*. At Augsburg his management of *Die Zeit* brought about his imprisonment for two years, during which time he translated a Chinese epic under the title *Das Blumenblatt* (published 1836). Upon his release from prison (1834) he went to Switzerland and became professor of German at Saint-Gall, and later at Aarau, where he was librarian also, and devoted himself to the study of German literature. His most important work is the *Geschichte der deutschen Literatur* (7th ed., 1876), which treats the theme in the pragmatic manner and is valuable because of the abundant biographical material and the judicious selections from the various authors. Among his other works mention should be made of *Handbuch der poetischen Nationalliteratur* (1840-43), *Handbuch der deutschen Prosa* (1845-46), *Die deutsche Literatur im Elsass* (1874), of his *Deutsche Bibliothek* (1862-68), in which he edited the *Esopus* of Burkhard Waldis, the *Simplicianische Schriften* by Grimmelshausen, *Fischart's Dichtungen*, and Wickram's *Rollwagenbuchlein*, and of the critical editions of Schiller (1867-68) and Goethe (1868-70).

KURZ, HERMANN (1813-73). A German poet, novelist, and translator. He was born at Reutlingen, Württemberg, was educated in the theological seminary at Maulbronn, and afterward studied theology and philosophy at the University of Tübingen. From 1843 to 1848 he edited an illustrated weekly at Karlsruhe, then, for a number of years, the Liberal Democratic organ *Der Beobachter* in Stuttgart, and in 1863 was made librarian of the University of Tübingen. He wrote two interesting novels, *Schillers Heimatjahre* (2d ed., 3 vols., 1857; illust. ed., 1905) and *Der Sonnenwirt* (2d ed., 3 vols., 1862). Of his many excellent translations, those of Ariosto's *Orlando furioso* (1840; new ed., with Doré's illustrations, 1881) and of Gottfried von Strassburg's *Tristan und Isolde*, with an original conclusion of his own (1844; 3d ed., 1877), are the most important. His literary and historical essays include *Zu Shakespeares Leben und Schaffen* (1868) and *Aus den Tagen der Schmach: Geschichtsbilder aus der Melaozeit* (1871); and, with Paul Heyse, he edited *Deutscher Novellenschatz* (1870-74) and *Novellenschatz des Auslandes* (1872-74), two admirable collections of the best short stories in German and foreign literature. His collected

works, edited by Heyse, appeared in 10 volumes (1874-75); complete works, 12 volumes (1904). Consult I Kurz, *Hermann Kurz* (Munich, 1906), and article in the *Allgemeine deutsche Biographie*, vol. xvii (Leipzig, 1883).—His daughter ISOLDE (1853-), born in Stuttgart and later resident in Florence, also became a poet and story-teller of note. Her writings include: *Florentiner Novellen* (1890); *Italianische Erzählungen* (1895), *Von dazumal* (1900); *Die Stadt des Lebens: Schilderungen aus der florentinischen Renaissance* (1902); *Neue Gedichte* (1905); *Lebensfluten* (1907); *Die Kinder der Lith* (1908); *Florentinische Erinnerungen* (1909); *Genesung und andere Erzählungen* (1912).

KUS. See KHONDS

KUSAN (kōō'sān) **STOCK**. A small linguistic group of tribes on the Coos River and Bay and mouth of the Coquille River, on the coast of Oregon. They call themselves Anasitch. Most of the survivors are located under government care on the Siletz Agency. Various names have been given to them in the past: Ka-us or Kwo-Kwoos, by Hale; Ko-wes, by Milhau; Cook-Koo-oose, by Lewis and Clark; Ka-us, by Latham. While Gatschet mentions the following tribes or villages: Anasitch or Hau-nay-sitch, Melukitz, and Mulluk or Lower Coquille, Dorsey divides them into the following villages: Mulluks, mouth of the Coquille River; Naçumi or Masumi, south of the Coquille River, Melukitz, north of Coos Bay; and Anasitch, or Hannay-sitch, south of Coos Bay. The chief interest in the Kusan peoples is concerning their origin. They are wedged in between the Athapascan and Yakonan tribes and the Pacific Ocean, like many other fading stocks on this coast, and bear no known relationship with any other people. Consult *Indian Affairs Report* (Washington, 1860); Bancroft, *Native Races* (New York, 1874); *Twelfth Report of the Bureau of American Ethnology* (Washington, 1890), Lewis, *Tribes of the Columbia Valley and the Coast of Washington and Oregon* (Lancaster, Pa., 1906).

KUSI, kōō'sé, or **COOSY**. A northern tributary of the Ganges, India, rising in the Himalayas of Nepal and flowing at first south and then southeast through Nepal. At the confluence of the Arun it turns southward and, after entering Behar, joins the Ganges below Bhagalpur. Its length is 325 miles, but it is unfit for navigation on account of its rapid course and destructive floods.

KUSKOKWIM (kūs'kō-kwim) **RIVER**. A stream rising in the glaciers of the McKinley Range of mountains and flowing southwesterly into Bering Sea, the second largest river in Alaska, with drainage basin of nearly 50,000 square miles (Map: Alaska, G 5). It is about 700 miles in length and is navigable for steamboats to the forks, 500 miles from the mouth. The development of the Innoko mining district has greatly increased the importance of the Kuskokwim valley, which is now dotted with mining camps and trading establishments. The United States has subserved the interests of the natives by the establishment of schools and by the introduction of reindeer. The principal native settlements are Akiak, government school; Kinak, school, 423 deer; Quinhagak, school, 521 deer; and Bethel, school, and the largest number of reindeer in Alaska, the herds there and near aggregating 4714 head. The government railway system, lately authorized by Congress, will

bring the upper parts of the valley in railway communication with the south coast of Alaska.

KUSNETSK. See KUZNETSK.

KUSSEWITZKY, ku's'-vi't'ski, SERGEI ALEXANDROVICH (1874-). A Russian musical conductor and contrabass virtuoso, born at Vishni Volotchik. Having completed his education at the conservatory of the Moscow Philharmonic Society, he became a teacher there and a member of the Imperial Orchestra in 1900. After a concert tour of Germany in 1903 he was pronounced the greatest contrabass virtuoso since Dragonetti (q.v.), and a second tour in 1906 was almost sensationally successful. But instead of continuing this career he returned to Russia and there organized a symphony orchestra of 75 picked players, with which he gave every winter a series of concerts in Moscow and St. Petersburg (Petrograd). Beginning with the summer of 1909, he instituted a regular annual concert tour along the Volga, doing real pioneer work. He composed a concerto for contrabass and orchestra.

KUSSMAUL, ku's'moul, ADOLF (1822-1902). A German physician, born at Graben and educated at Heidelberg. There he was assistant for some time and wrote the valuable work, *Die Farbenerscheinungen im Grunde des menschlichen Auges* (1845). In 1857 he was made professor and director of the clinic at Heidelberg, and afterward he held chairs in Erlangen (1859-63), Freiburg (1863-76), and Strassburg (1876-89). He then retired to Heidelberg, where he was professor emeritus until his death. Kussmaul devised much apparatus for use in internal therapeutics and in 1867 introduced the use of the stomach pump. In the realms of physiology, psychiatry, toxicology, and especially internal medicine, he was an able and industrious investigator. Among his more important publications are: *Untersuchungen über das Seelenleben des neugeborenen Menschen* (3d ed., 1896); *Ueber den konstitutionellen Merkurialismus*, etc. (1861); *Zwanzig Briefe über Menschenpocken- und Kuhpockenimpfung* (1870); *Die Störungen der Sprache: Versuch einer Pathologie der Sprache* (1877), which by many is considered his most remarkable work, and a translation of which may be found in Ziemssen's *Cyclopædia of Practical Medicine* (New York, 1887); and an interesting autobiography, *Jugenderinnerungen eines alten Arztes* (8th ed., 1909).

KÜSSNACHT, ku's'nächt. A village in the Canton of Schwyz, Switzerland, situated on an arm of Lake Lucerne, at the foot of the Rigi, near the spot where William Tell is said to have shot Gessler (Map: Switzerland, C 1). It has a statue of Tell, and near by are the ruins of an ancient castle which tradition calls Gessler's. Pop., 1900, 3572; 1910, 3981.

KÜSSNER-LOUDERT, ku's'nër-kö'dër', AMALIA (?-). An American miniature painter. She was born (Küssner) in Terre Haute, Ind., and obtained her artistic training in New York City. In 1898 she went to London, where she soon achieved great success. Among her sitters were the Prince of Wales (Edward VII), the Duchess of Marlborough, Lady Warwick, and many other members of the nobility. She also spent some time in Russia, where she executed miniatures of the Czar, Czarina, and other members of the royal family, and in 1899 she went to South Africa to paint the portrait of Cecil Rhodes. After her mar-

riage in 1900 to Capt. Charles D. Coudert, of New York, she practiced miniature painting in that city.

KUSTENDJE, ku-stën'je, or CONSTANTZA. A seaport of Rumania, situated on the Black Sea, a little over 30 miles from the mouth of the Danube (Map: Balkan Peninsula, G 2). It has a number of churches and mosques and is the seat of many foreign consular agents. It is a place of great commercial importance as the maritime terminal of the Rumanian railway system and, since the completion of the harbor improvements begun in 1890, is one of the chief commercial centres of the Kingdom. Pop., 1899, 12,725; 1912, 26,628. Kustendje is the ancient Tomi, Ovid's place of exile, rechristened Constantiana in honor of the sister of Constantine the Great in the fourth century A.D. At Kustendje terminates Trajan's Wall, a remnant of the old Roman fortifications.

KÜSTENLAND, ku'sten-länt, COAST DISTRICTS, or LITTORALE. A name applied to the Austrian crownlands of Istria and Görz and Gradisca, and the city of Trieste, with its territory (Map: Austria, C 4). These crownlands have their own diets, but there is a common superior administration at Trieste, represented by a governor and judicial and financial departments. Area, 3077 square miles. Pop., 1900, 756,546; 1910, 894,457.

KÜSTNER, kust'nër, KARL THEODOR VON (1784-1864). A German theatrical manager, born at Leipzig. He studied law there and later at Göttingen and from 1817 to 1828 was manager of the Stadttheater (Leipzig). As director, subsequently, of the Court Theatre in Munich (1833-42), and as intendant general of the royal theatres in Berlin (1842-51), his artistic qualities and superior business ability proved of great value in bringing about important reforms in the technical and economic conditions of theatrical matters. Dramatic authors are indebted to him for the initiation, conjointly with Holbein, in 1845, of royalties. His *Vierunddreissig Jahre meiner Theaterleitung* (1853) is a valuable contribution to the history of the theatre. King Louis I of Bavaria made him Privy Councillor and conferred nobility upon him in 1837.

KÜSTRIN, ku's-trën', or CÜSTRIN. A town of the Province of Brandenburg, Prussia, and a fortress of the first rank, situated at the confluence of the Oder and Warthe, 52 miles east of Berlin (Map: Prussia, F 2). It consists of the main town within the fortifications, between the two rivers, one suburb on the left bank of the Oder and the other on the right bank of the Warthe. It has a handsome town hall and the church of St. Mary, with tombs of Margrave Johann and his wife Katharina. There are machine works and manufactories of copper and brass ware, fire-extinguishing apparatus, pianos, roofing paper, vehicles, furniture, cigars, lumber, creosoted block, bricks, malt, and potato meal. Pop., 1900, 16,473; 1910, 17,600. Frederick the Great was detained a prisoner here by his father. In 1806 Küstrin was surrendered without a blow to the French, who retained it until 1814.

KUTAJA, kö-ti'ä, or KUTAHIA. A town of Asiatic Turkey, situated in the Vilayet of Brusa, about 70 miles southeast of the town of Brusa (Map: Turkey in Asia, B 2). It is poorly built, but has a large number of mosques and

several Christian churches. The chief products are agricultural, the once extensive pottery industry being almost extinct. In the vicinity are obtained considerable quantities of meerschau. The trade is considerably facilitated by the railway lines connecting Kutais with Angora and Constantinople. Pop. (est.), about 25,000, consisting of Mohammedans, Greeks, and Armenians. Kutais is noted for the treaty of peace concluded here between Egypt and Turkey on May 4, 1833.

KUTAIS, koo-tis'. A government in the northwestern part of Transcaucasia, Russia, with an area of 8145 square miles (Map: Russia, F 6). The surface is extremely mountainous, and agricultural land is scarce. The region is watered chiefly by the Rion and its tributaries; it has a warm climate, the annual temperature averaging 58°. Kutais is known as one of the world's sources of manganese; it has also deposits of lead, copper, and coal. Corn, wine, and tobacco constitute the chief agricultural products. Stock raising is of great importance, while manufacturing industries are practically unknown, although a little silk is produced. Owing to its great fertility, this government is the most densely populated in Transcaucasia, having in 1912 a population of 1,025,300. Most of the inhabitants belong to various tribes of the Caucasus, the Russians constituting only about 1 per cent of the total. In religion the population is about 86 per cent Greek Orthodox and the remainder chiefly Mohammedan. Capital, Kutais (qv).

KUTAIS. The capital of the government of the same name, in Transcaucasia, Russia, situated on the Rion, 115 miles west-northwest of Tiflis, with which it is connected by rail (Map: Russia, F 6). It has two Gymnasias and a seminary for teachers. Its ruined eleventh-century cathedral is the finest piece of Georgian architecture known. Hats and silk are the chief manufactures. Pop., 1911, 57,361, including a number of Armenians and Jews, who are mostly engaged in trade. Kutais is one of the oldest towns of the Caucasus and is identified with the Kotatision of Procopius. It became Russian in 1810. In the vicinity are the ruins of several ancient fortresses.

KUTENAI, koo'te-nā (properly, KUTONÁQA). A small group or confederacy of tribes constituting a distinct stock (Kitunahan), formerly occupying the narrow valleys along Kootenai River and the Arrow Lakes, on both sides of the British Columbia-Montana boundary, and now chiefly gathered upon reservations in the same region. There is evidence that they formerly lived in the eastern plains and were driven into the mountains by the Blackfeet. Their extension southward into Montana dates from their peace with the Flatheads, about 100 years ago. Since then the two tribes have been friends and were formerly accustomed to make joint expeditions annually to the headwaters of the Missouri, for the purpose of hunting the buffalo. They lived in tepees. From their earliest acquaintance with the whites they were noted for their honesty and good qualities. No special study of these Indians has been published. They number in all about 1000, of whom 538 reside in western Montana and Idaho, the others in adjacent parts of Canada. Consult: A. F. Chamberlain, "Report of the Kootenay Indians of South Eastern British Columbia," in *Report of the British Association for the Advancement of Science*,

(London, 1892), and John Maclean, *Canadian Savage Folk* (Toronto, 1896).

KUTHA KANGIE. See HIMALAYA.

KUTTENBERG, kut'ten-bérk. A mining town of Bohemia, 45 miles east-southeast of Prague (Map: Austria, D 2). Of its churches, the most notable is the uncompleted Gothic church of St. Barbara, dating from the end of the fourteenth century. The old Wälscher Hof was for a time the residence of the Bohemian kings. In its mint the first *Silbergroschen* was coined in 1300. There are also an old town hall, barracks, an Ursuline convent, an artisans' and agricultural school, and manufactures of sugar, spirits, beer, vinegar, machinery, organs, and textiles. Pop., 1900, 14,799; 1910, 15,542.

KUTUSOV, koo-tso'sóf, MIKHAIL ILARIONOVITCH GOLENISHTCHEV, PRINCE OF SMOLENSK (1745-1813). A Russian field marshal, born in St. Petersburg. He entered the army when young and rose rapidly. He took part in the campaign against Poland (1764-69), fought the Turks in 1770, again in 1771-72, served under Suvarov in 1789 and 1790, and was made successively Ambassador at Constantinople, Governor of Finland, and Governor of St. Petersburg (1801). He was appointed in 1805 to the command of the First Army Corps against the French. In November of that year he was victorious over Marshal Mortier at Durnstein. He was in command of the allied army under the Emperor Alexander at Austerlitz (Dec. 2, 1805). After the defeat at Austerlitz he was appointed military governor of Kiev. In 1811-12 he commanded the Russian army in the war against the Turks and succeeded Barclay de Tolly in 1812 as commander in chief of the army against the French, lost the battle of Borodino (qv.), but gained a great victory over Davout and Ney at Smolensk. He carried on the campaign to its successful termination, but his strength was exhausted, and he died at Bunzlau, April 28, 1813. In Moscow and St. Petersburg monuments were erected in his memory. Consult Friedrich Von Bucholtz, "Der Feldmarschal, Fürst Kutusow Smolenskoi," in *Geschichte der europäischen Staaten*, vol. ii (Berlin, 1814), and J. H. Schnitzler, *La Russie en 1812: Rostoptchine et Koutousof* (Paris, 1863).

KÜTZING, ku'tsing, FRIEDRICH TRAUGOTT (1807-93). A German botanist, born at Ritteburg in Thuringia. He studied natural history at Halle and traveled in southern Europe, especially studying the flora of the Adriatic coast, and from 1838 to 1883 he taught natural science at Nordhausen. In his *Grundzüge der philosophischen Botanik* (1851-52) there are conclusions as to the origin of species similar to the ideas later advanced by Darwin. Besides the above, he published several other works of considerable importance.

KUTZTOWN, kuts'toun. A borough in Berks Co., Pa., 18 miles west-southwest of Allentown, on the Philadelphia and Reading Railroad (Map: Pennsylvania, K 6). The Keystone State Normal School is here, and there is a public park. The borough has a large foundry, marble and granite works, knitting mills, and manufactures flour, shoes, hosiery, silk goods, shirts, etc. The borough owns the electric plant. Pop., 1900, 1328; 1910, 2360.

KUVERA. See KUBERA.

KUXHAVEN, kuks-hä'fén. A seaport of Germany. See CUXHAVEN.

KUYPER, koi'pér, ABRAHAM (1837-

).

A Dutch statesman and theologian, born in Maassluis and educated at Leyden. His father was a pastor of the Reformed church; the son received a difficult country charge at Beest in 1863 and five years afterward went to Utrecht, where he began his struggle for the independence of the Reformed church. In 1870 he became pastor, in Amsterdam, of the largest congregation in Holland. There he grew more and more engrossed in politics. He undertook to edit *De Standaard* in 1872, and in this conservative secular journal, as well as in his religious organ, the *Herout*, opposed modernism, which he considered an enemy of Christianity, or, in his own phrase, of Calvinism. Thus he became the logical political successor of Groen van Prinsterer and was elected to Parliament in 1874, but was forced to resign soon afterward. His political purposes were sketched in *Ons Program* (1879). In 1880 he established the Free University of Amsterdam and in 1886 definitely broke with the national church and formed the Free Reformed church. He returned to Parliament in 1897, carried through the great Conservative and Clerical alliance between Calvinist and Catholic parties, and in 1901, as leader of this fusion, formed a cabinet in which he took the portfolio of the Interior. Owing to his reactionary policy in the matter of public education, his party was defeated at the polls in June, 1905, and he resigned in the following month. At various times thereafter he was in Parliament and in 1907 was Minister of State. He served as president of the Netherlands Council for Internationalism in 1911. Kuyper lectured in the United States at 20 places, his Stone lectures at Princeton (1898) on Calvinism being published the next year. He received various government decorations, and honorary degrees from several universities. His *Encyclopaedia of Sacred Theology* (*Encyclopaedie der heilige godgeleerdheid*, 1898; 2d ed., 1908-10) and his *Work of the Holy Spirit* (1900) were translated into English by H. DeVries. In Church history his important work is an edition (published in 1886) of the Polish reformer John à Lasco. Among Kuyper's other writings are: *In Jesus ontlopen* (2d ed., 1906); *Om de Oude Wereldzee* (1907-08); *Parlementaire redevoeringen* (1908-10); *Practijk der godzaligheid* (1910).

KUYUNJIK. See KOYUNJIK.

KUZNETSK, kooz-nyetsk', or **KUSNETSK**. The capital of a district of the same name in the Government of Saratov, Russia, situated on the river Truyev, over 280 miles north-northeast of Saratov (Map: Russia, G 4). It produces leather, rope, and tallow, and carries on some trade in grain. Pop., 1912, 22,605. There is a small town of the same name in the Government of Tomsk, West Siberia.

KVICALA, kvě-chá'la, JAN (1834-1908). A Bohemian classical scholar and politician. He was born at Münchengrätz in Bohemia, studied at Prague and at Bonn, and in 1859 was made professor of classical literature at Prague. His philological writings include: Czech translations of Herodotus and Sallust, *Beiträge zur Kritik und Erklärung des Sophokles* (1864-69); *Vergilstudien* (1878); *Studien zu Euripides* (1879); *Neue Beiträge zur Erklärung der Aeneis* (1881). In 1881, as a member of the Bohemian Diet, he introduced the so-called *Law Kvicala*, a bill providing for separate schools for German and Czech children, and was prominent in the agita-

tion which resulted in the division of the University of Prague into a German and a Bohemian university.

KWAKIUTL, kwā-kē-ootl' (incorrectly, KWAWKEWLTH and QUACOLTH). A group or confederacy of tribes of strongly differentiated Wakashan stock (q.v.), living in intimate association with the closely cognate Hailtzuk on both sides of Queen Charlotte Island, at the upper end of Vancouver Island, and on the opposite shore of British Columbia. Among more than 20 subtribes the best known are the Kwakiutl proper, near Fort Rupert, Nimkish, Koskimo, Mamalilikulla, Tsawatienuk, and Tanaktut. They are distinguished for devotion to the custom of *potlatch* (q.v.), which is by some believed to have originated with them, and for their peculiar social organization, according to which the whole active government is under the control of secret societies. They have the gentile or clan system, but with the descent in the male line. There are three social ranks—the hereditary chiefs, the middle estate or burghesses, and the third, who are chiefly slaves and their descendants. The middle class is made up of the members of the secret societies, and the greater the number of such societies to which a man belongs the greater is his standing and influence. The third or lowest class consists of those who are not members of any secret society, and who are in consequence shut out from any part in councils or other State affairs. The candidate for initiation must submit to severe vigil, fasting, and torture, and distribute numerous presents to each one taking part in the ceremony. The greatest of all is the *hamatsa*, or cannibal society, to which no one can be admitted until he has been a member of a lower society for eight years. Women may become members and have also their own societies.

Having an unlimited food supply of fish, venison, seal meat, and berries, and being comfortably housed after the manner of the Northwest coast tribes generally, and moreover regarded by all their neighbors as the guardians of the ancient priestly rites, the Kwakiutl are strongly conservative and opposed to all the methods and religion of the white man, although they are very law-abiding. Consult Franz Boas, "Social Organization and Secret Societies of the Kwakiutl Indians," in *United States National Museum, Annual Report* (Washington, 1895), and "The Kwakiutl," in *American Museum of Natural History, Memoirs*, vol. viii (New York, 1909).

KWANGCHOWFU, kwāng'chō'fōo'. The native name of the Chinese city called by foreigners Canton (q.v.).

KWANGSI, kwāng'sē' (Chin., broad west). An inland province of south China, lying to the west of Kwangtung. It is bounded on the south by a portion of Kwangtung and the northeast part of Tongking, on the west by Yunnan, and on the north by Kweichow and Hunan (Map: China, J 7). Its southerly parts are traversed by branches and spurs of the Nan-shan Range, an offshoot of the great mountain masses of Tibet, which stretches through Kwangtung to the coast range of Fukien. It is the least populous and the poorest province of China. It is watered chiefly by the Si-kiang, or West River, which has numerous tributaries, some of them of considerable length. This river rises in Yunnan, and after a course of 1000 miles debouches into the China Sea below Canton. All

the activity and the principal centres of population are in the east and southeast. Besides grain it produces for export cassia, cassia oil, and medicines. It has almost a world monopoly of aniseed. The province is rich in minerals, but these are undeveloped. The mountains to the northeast also furnish some timber. Its greatest trading centre is Wuchow (pop., 65,000), on the Si-kiang, near the border of Kwangtung, and 200 miles above Canton. This is an open port and has a Chinese maritime customs station. It has considerable steamer traffic. Nanning, a city of 100,000 inhabitants, was voluntarily opened by China in 1907. Another open port is Lungchow, on the Tongking frontier. The capital is Kweilin (q.v.). Area, 77,200 square miles; pop., 5,425,000, including many Hakkas (q.v.), but exclusive of many members of aboriginal tribes called Miaotse, who still maintain a sort of independence in the mountains. A number of these Miaotse are partly civilized and live in communities by themselves under government supervision. The people of Kwangsi are among the most turbulent in China. The great Taiping rebellion began in this province, and there was another serious rebellion in 1902-05.

KWANG-SÜ, kwáng'sü', or **KUANG-HSÜ** (brilliant succession) (1872-1908). The reign title of Tsai T'ien, the ninth and second-last Manchu Emperor of China. He was the son of Ch'un I-hwan (commonly known as Prince Ch'un), the seventh son of the Emperor who reigned as Tao-kiang and who died in 1850. Kwang-sü was born in 1872 and was selected as Emperor by the Empress Dowager Tzu-hsi in 1875, at the death of her son, the childless Emperor Tung-chih. During his minority the Empress Dowager was Regent, which she continued to be until 1889, when she voluntarily handed over the reins of government to Kwang-sü. Kwang-sü was throughout his life dominated by and in fear of the masterful Tzu-hsi, except for the brief era of reform in 1898. He was frail in health, rather timid, and extremely youthful-looking, even in middle age. Although ambitious for the welfare of China, his reign was a series of national humiliations. Chief among these was the war with Japan over Korea. China was overwhelmingly defeated on land and sea and was forced to acknowledge the independence of Korea, besides ceding the Liaotung peninsula (later retroceded by Japan through the intervention of Russia, France, and Germany in China's behalf), the Pescadores, Formosa, and to pay an indemnity of 200,000,000 taels. As the weakness of China was thus revealed to the world, Germany seized Kiaochow (Tsingtau), because of the murder of two priests, and leased it for 99 years. Russia followed by demanding and receiving Port Arthur and Dalny, England Weihaiwei and the Hongkong Extension, and France Kwangchow Wan. The Emperor was much affected by these disasters and saw that radical reforms were necessary to save China. He had read a number of foreign books, including the Bible, and was determined to model China on Western civilization. To aid him in this work, he appointed K'ang Yu-wei, a modern Chinese scholar and reformer, as his chief adviser. Unfortunately the reforms attempted were too sweeping and violent. The chief opposition came from the Manchus, who called upon the Empress Dowager to resume control, which she had relinquished in 1889. A plot of the Emperor to seize and imprison Tzu-hsi failed, and the

result was the coup d'état of 1898. A violent reaction set in; reformers were beheaded or banished, and Kwang-sü was practically deposed. In a decree he was forced to appoint the Empress Dowager as coadministrator, and with that act his reign was virtually ended. The forces of reaction continued until 1899-1900, when the Boxer rebellion proved to the Empress Dowager that the old system was no longer possible. The result was many reforms, such as Kwang-sü had tried to establish and failed, and which were now necessary in the effort to save the Manchu monarchy. Tzu-hsi continued in power until her death (Nov. 15, 1908), a day after the demise of Kwang-sü. His successor was Hsüan-tsung, a child three years old, and the last Manchu Emperor of China. He abdicated, Feb. 12, 1912, in favor of the Republic.

KWANGTUNG, kwáng'tung' (Chin., broad east) The most southerly of the six maritime provinces of China proper, bounded on the southeast and south by the China Sea, on the west by Kwangsi, and on the north by Hunan, Kiangsi, and Fukien (Map China, K 7). About two-thirds of its area of 79,456 square miles are covered by moderately high mountains, the chief ridges of which—known as the Nan-ling and Meiling—extend along the northern boundary, forming the watershed between the rivers Siang and Kan, which flow north to the Yang-tse and the North and East rivers, which have their origin in Kiangsi and flow south, the former joining the West River from Yunnan and Kwangsi at the town of Samshui (Three Rivers) to form the Chu-kiang, or Pearl River, on which Canton is situated, and the latter flowing into the Chu, a little lower down. Samshui stands at the apex of a great delta, which is intersected by numerous navigable branches and creeks of the West and Chu rivers and forms the richest and most fertile part of the province. The other important river of the province is the Han, which rises in the mountains back of Fukien and falls into the sea near Swatow (q.v.). The coast line is much broken, and islands are numerous. The largest of these is Hainan (q.v.). Another of importance is Hongkong (q.v.). There are two prominent peninsulas that on the south, separated from Hainan by only a few miles, is called Leichow and forms a department of the same name; that on the southeast forms the Department of Kowlung (or Kowloon), 376 square miles of which were leased to Great Britain in 1898 for 99 years, and are known as the Kowloon Extension.

The province is rich in minerals. Coal is found in three different places. It is now mined, it is of poor quality, but is much used by the natives, especially in the iron and steel works of Fatshan (q.v.). Iron ore is found in 20 places, and silver mines were worked at one time. The chief commercial products are silk and silk fabrics, which represent about 60 per cent of the foreign exports; tea, cassia and cassia buds, matting, 75 per cent of the annual output being exported to New York; firecrackers, palm-leaf fans, chinaware, and pottery, that of Shekwan being the best. Ginger is widely grown, both on the hillsides and in fields, and a great "preserving" industry is carried on at Canton, with large exports. Other noted preserves are chowchow (bamboo shoots), pineapple, and kumquat. Other products are sugar, tobacco, galangal, turmeric, betel nuts, coconuts, agar-agar, and fragrant woods from Leichow and

Hainan, Chinaroot and staraniseed, and various oils. Great quantities of rice are grown, but not enough for the population, and some half-million tons are imported annually.

The open ports of the province are Canton, Swatow, Samshui, Pakhoi, Kongmoon, and Kiungchow. The ceded territories are Hongkong and Macao. The leased territories are Kwangchow Wan and Kowloon Extension. There are two Chinese customs stations, at Kowloon City and at Lappa, for the control of the junk trade. Kwangchow Wan, opposite Hainan, was leased to France for 99 years in 1898 and declared a free port in 1902. Macao (q.v.), some miles below Canton, has been a Portuguese possession since the Treaty of 1887. The Canton-Hankow Railway line, when completed, will pass through the provinces of Kwangtung, Hunan, and Hupeh, a distance of 730 miles. The capital of the province is Kwangchowfu, better known as Canton. Kwangtung early became known to Europeans. The Arab voyagers came as early as the tenth century; the Portuguese first arrived in 1517, and a British fleet of merchantmen sailed into the Canton River in 1657. In 1684 was established the factory of the East India Company. The population is about 32,000,000, which includes about 3,000,000 Hakkas (q.v.) and a great many aborigines. The people are industrious and capable and pursue innumerable handicraft industries. For population and facts about important cities in the province, see separate titles.

KWANTO, kwán'tō' (Simco-Japanese, barrier east). A name loosely applied to that portion of the main island of Japan which lies east of the Hakone Mountains, referring more particularly to the Hasshu, or Eight Provinces, which were assigned by Hideyoshi to Iyeyasu. At the end of the seventh century the "barrier" lay farther west, in the vicinity of Kyoto, and in those days the Kwantō meant the whole region lying to the east of that.

KWANTUNG, kwán'tung' (Chin., barrier east). A name loosely applied to that part of China which lies east of the "barrier," meaning more particularly the barrier of Shanhaikwan, where the great wall juts into the sea, but probably also to the barrier which is supposed to divide Mongolia from Manchuria, and is commonly laid down on maps as "palisades," though no palisades exist. In this sense it would include the two provinces of Kirin and Shing-king.

KWAN-YIN, kwán'yēn' (Chin., sound-regarding, i.e., prayer-hearing, a translation of Skt. *avalokiteśvara*, down-gazing lord, pitying lord, misread *avalokitasvara*, down-gazing sound, sound-regarding). A mythical Bodhisattva, or Buddha elect, who is worshiped in Sikkim, Nepal, and Tibet under the name Avalokita, or Avalokiteshvara, in China under the name of Kwan-yin, or Kwan-shih-yin, and in Japan as Kwan-non, or Kwan-se-on. In the first-mentioned group of countries this deity is invested exclusively with male attributes, but in China and Japan with female attributes—a change of sex which seems to date, in China at least, from the twelfth century and has never been satisfactorily accounted for. The Grand Lama of Tibet is a living incarnation of Avalokita, the patron deity of the country and the protector of the faithful. One of his many names is Maha-Karuna (the great pitier). In China and Japan Kwan-yin (Kwan-non) is known as the Goddess of Mercy. Her worship is very popular. One of

her names is Pa-nan-kwan-yin, or the compassionate goddess who succors those who are exposed to the eight kinds of suffering. As the Sung-tse Kwan-yin, she is the Giver of Sons and hence is much worshiped by childless married women. Sometimes she is represented with 3 or 8 or 11 faces, or with 1000 eyes and 1000 arms; the faces and eyes indicating her omniscience and the arms her omnipotence. In China the island of Pu-to, near Chusan, is specially dedicated to Kwan-yin, and, as it dates from the year 915, many images with male attributes are found there. Thousands of monks and other worshipers from all parts of China, as well as from Tibet and Mongolia, visit the place annually. The worship of Kwan-yin is peculiar to that development of Buddhism which is called Mahayana, or the Great Conveyance. See MAHAYANA.

Consult: Eitel, *Handbook for the Student of Chinese Buddhism* (Hongkong, 1870); Edkins, *Chinese Buddhism* (London, 1880); Lloyd, "The Development of Japanese Buddhism," in *Transactions of the Asiatic Society of Japan*, vol. xx (Yokohama, 1894); Waddell, *The Buddhism of Tibet* (London, 1895); W. E. Griffis, *The Religions of Japan* (New York, 1895).

KWEICHOW, kwá'chou', Chin. pron. -chō', or **KUEICHOU** (Chin., honorable land). "The Switzerland of China," an inland province, bounded on the southwest by Yunnan, on the northwest and north by Szechwan, on the east by Hunan, and on the south by Kwangsi. Area 67,000 square miles (Map: China, J 6). About seven-tenths of the province is mountainous, with some fine grassy plains of no great extent. The population is sparse, about 168 to the square mile; cultivation is carried on only in the neighborhood of towns and villages. The chief crops are wheat, barley, and rice. Coal, iron, copper, silver, quicksilver, and antimony exist in great quantity. Coal is worked extensively for domestic use. Opium production is still considerable, but is gradually being reduced on account of the national prohibition, and its elimination is only a question of time. Wood oil, fibre paper, "rice paper," and white wax and gallnuts are the chief exportable products. The province supplies several considerable tributaries to the Si-Kiang, which flows through Kwangsi and Kwangtung. On the whole communications are difficult. The Wu-kiang rises north of the capital, and, after a course of 500 miles north-east and north, flows into the Yang-tse at Fuchow. Owing to its rapids, it does not become navigable until it approaches Szechwan, 100 miles from its mouth, where it is known as the Kung-tan River. The Yuen, which flows east and northeast into the Tung-ting Lake, in Hunan, waters the southeastern part of the province. Its upper courses are obstructed by numerous rapids, but it is navigable from its mouth to within 130 miles of the capital, Kweiyang (q.v.). Under the old régime Kweichow formed with Yunnan the governor-generalship of Yun-Kwei. The population numbers 9,265,000, according to the Chinese governmental census of 1910, published in the government Gazette of Feb. 27, 1911. There are many immigrants from the neighboring provinces. Kweichow has no treaty ports, and its exports go by way of Hunan and Kiangsi. The province has not yet recovered from the devastation caused by the war which existed in the first half of the nineteenth century between the Chinese and the Miaotse, who

still inhabit the mountains and maintain a sort of independence.

KWEILINFU, kwá'lén'fóo' (Chin., cassia forest city). The capital of the Chinese Province of Kwangsi (q.v.). It is a walled city, somewhat decayed, situated on the navigable river Kwei (Map: China, K 6), about 250 miles northwest of Canton, with which it has river communication.

KWEIYANGFU, kwá'yáng'fóo'. The capital of the Chinese Province of Kweichow. It is finely situated in a plain, full of trees and encircled by hills, near the centre of the province, and is surrounded by walls of white marble and contains monuments of the same material and many handsome memorial arches erected to the memory of women (Map: China, J 6). It is the smallest of all the provincial capitals of China, its walls having a circuit of only 2 miles. Its streets are fairly wide, its shops large and prosperous-looking, and its inhabitants civil. Their foreign goods are received through the Tung-ting Lake and the Yuen River. Its fuel supply is derived from the coal mines 10 miles west of the city. The hills in the . . . are covered with vegetation, and . . . have beautiful temples on the summits.

KYANIZING, kí'an-iz'ing. An efficacious method of preserving timber from dry rot (q.v.) by injecting into the pores of the wood a solution of corrosive sublimate, it was invented by John H. Kyan, who was born in Dublin, Nov. 27, 1774, and died in 1850.

KYD, kíd, THOMAS (c.1557-c.1595). An English dramatist, son of a London scrivener, born about 1557. He attended the Merchant Tailors' School and acquired some knowledge of Latin, French, Italian, and Spanish. He died about 1595. His two plays, having as hero Jeronimo (or Hieronimo), Marshal of Spain, were immensely popular. They are known as *The First Part of Jeronimo* (printed, 1605) and *The Spanish Tragedy* (printed, 1594). Upon the authenticity of these plays, or at least upon that of the first of them, some doubt has been cast. They were both performed probably as early as 1588. They were frequently quoted and abused by later dramatists, and to the second play Shakespeare seems to have been indebted for some of the machinery of *Hamlet*. Kyd wrote other tragedies and may have been the author of a lost *Hamlet*. Consult his *Works*, ed by Boas (Oxford, 1900), Ward, *History of English Dramatic Literature*, vol ii (London, 1881); Sarrazin, *Thomas Kyd und sein Kreis* (Berlin, 1882).

KYI, kyé. See KHASI.

KYLIN. See K'Y-LIN.

KYLLMANN, kíl'man, WALTHER (1837-) A German architect, born at Weyer-bei-Wald, Rhenish Prussia. He studied at the Academy of Architecture in Berlin and was a commissioner at the Paris exhibition in 1867. He formed a partnership with Adolf Heyden about 1868 and with him designed numerous public and private buildings in Berlin and vicinity, among them the Kaisergalerie (one of the handsomest arcades in Europe), the Johannis-kirche in Düsseldorf, the post offices in Breslau and Rostock, and the buildings of the German Empire at the Vienna Exposition of 1873.

KYLOE CATTLE. See HIGHLAND CATTLE

KYLPONT, kíl-pónt', or **KYNPONT**, kínpónt', ROBERT. See PONT, ROBERT

KYMBY, kí'm'ri, or **CYMBY**. See WALES, *History*.

KYOTO, or **KIOTO**, ká-ó'tó (Chin., capital); also called MIAKO, MIYAKO, SAIKYO. One of the three *fu* cities of Japan and the capital of the country from the year 794 until 1868, when the shogunate was abolished and the Mikado and his court removed to Yeddo (Tokyo) (Map: Japan, D 6).

The city stands on the island of Hondo, in lat. 35° N. and long. 135° 30' E., in a fertile plain, bordered on three sides by moderately high mountains, near the centre of the Province of Yamashiro. It is 47 miles by rail from Kobe via Osaka on the coast and 329 from Tokyo, and is also connected by rail with Tsuruga on the Sea of Japan on the north and westward 302 miles with Shimonoseki (q.v.), where the island of Hondo approaches Kiushu. The city, which is unwalled, is traversed from north to south by the Kamo-river which divides it into two unequal parts. The larger and more important part lies along the right bank of the river, the wide shingly bed of which is nearly dry except in the rainy season. The smaller and more picturesque part, where are found most of the hotels patronized by foreigners, rises gradually from the left bank to the wooded steeper slopes and spurs of the range of mountains, where many of the more famous temples and places of interest are situated. In general the plan of the city differs but little from that of 794, which Kwammu Tenno, its founder, called Hei-an-jo (the city of peace). It is about 4 miles in length from north to south and 2½ in breadth and is laid out with mathematical regularity. The streets are wide, well kept, neat, and clean. In the northeast part is the Go-Sho or Imperial Palace, which, with its fine gardens in true Japanese taste, covers 26 acres. The buildings are of wood and are characterized by a certain quiet elegance which is peculiarly Japanese. They contain many fine paintings by Japanese artists and much fine carving. To the southwest of this is the Niijo, the castle of the Shogun, built in 1601 and now the seat of the city government. Though one of the gayest of cities, Kyoto is a great religious centre, and temples and shrines abound. Shinto (q.v.) claims 93 and Buddhism about 950. In the southern part of the city are the Eastern and Western Hongwan-ji, the headquarters of the Shin sect, whose temples are noted for their great size, their magnificence and their accessibility. On the eastern hills are many fine temples, such as the Chi-on-in and the San-ju-san-gen-Do. In this neighborhood is also found a large mound—the Mimidzuka—containing the ears and noses of the Koreans slain in the wars of Hideyoshi (1592-98). To the northeast of the Imperial Palace, on the way to Otsu, at a height of 2000 feet, and overlooking Lake Biwa, are the famous Buddhist monasteries of Hiei-zan, founded about 800 A.D., and intended originally to shield the palace from the evil influences of the north.

Kyoto is the centre of many art industries. Here the finest silks, crapes, velvet, brocades, and embroideries, porcelain, cloisonné enameled ware, bronzes, etc., are produced, the manufacture giving employment to thousands of skilled hands. Much Satsuma and other ware is brought here to be decorated. Under the city government is an industrial department for the promotion of the industrial arts, established in

1870, which includes experimental gardening, an experimental farm, a weaving department where foreign looms are used, a physical and chemical department, a female industrial school, a pauper industrial school, a shoemaking establishment, etc. Kyoto is the seat of an Imperial university, with colleges of law, medicine, and engineering; and under the auspices of the American Board of Commissioners for Foreign Missions is a college of good standing called the Doshisha, where theology is also taught. There are many schools, including five of the higher middle schools, and a training college for teachers. Pop., 1898, 353,139; 1908, 442,462.

KYRIE ELEISON, kīr'ī-ē ē-lā'ī-sōn (Gk. *Κύριε ἐλέησον*, *Kyrie eleēson*, Lord have mercy). A form of prayer which occurs in both Greek and Latin liturgies, borrowed from the use of the phrase in both the Old and New Testaments. It appears as a regular formula as early as the Apostolic Constitutions. It seems to have been introduced into the Western church in the fifth or sixth century. In the modern Roman Catholic mass it follows immediately upon the introit (q.v.). In the Eastern churches it is used

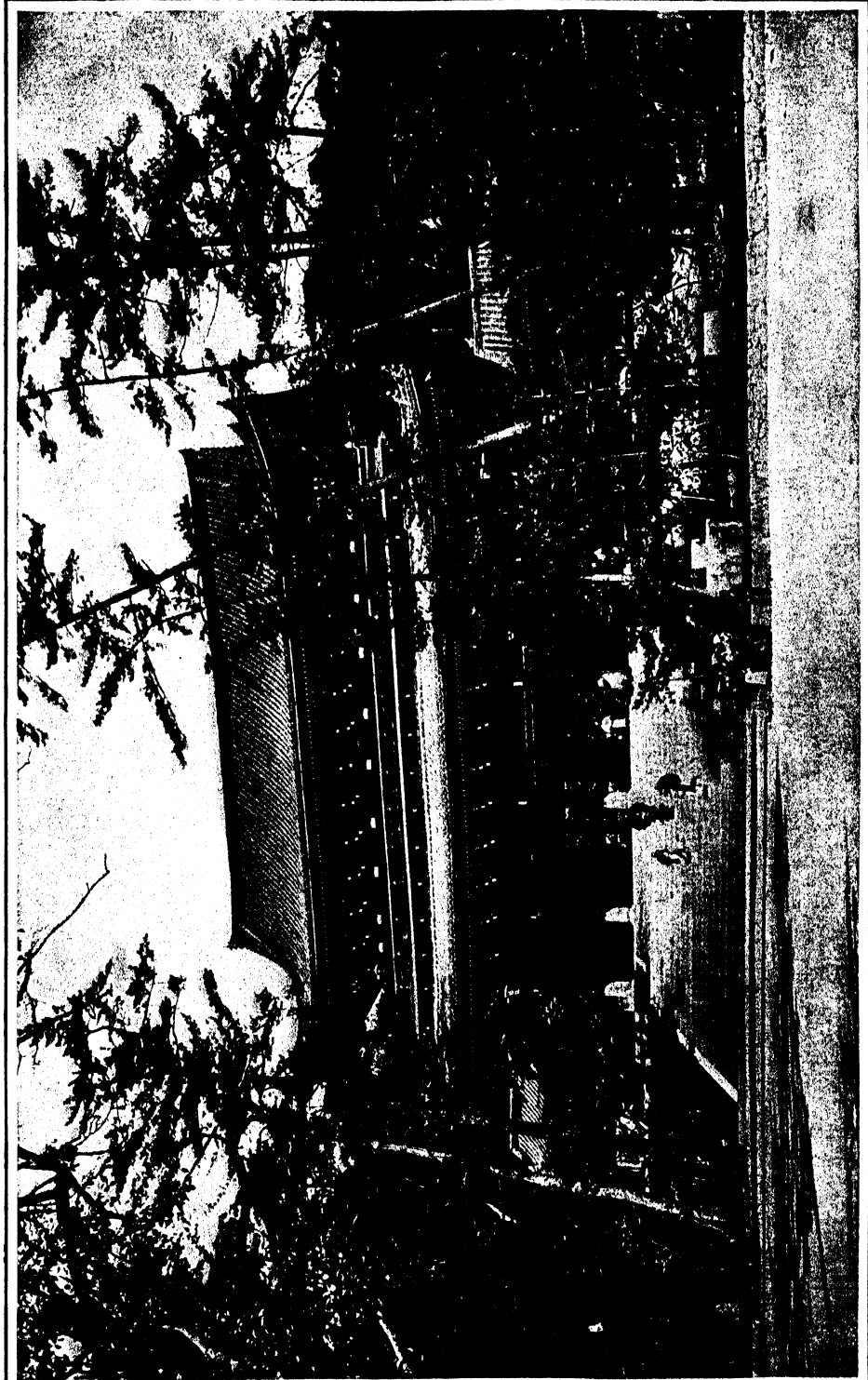
very freely, being the ordinary response to each clause of the litany. In the Book of Common Prayer it is used, in the morning and evening services, but translated into English.

KYRLE, kērl, JOHN (1637-1724). An English philanthropist, famed by Pope's eulogy of him in his third *Moral Epistle* under the name "The Man of Ross." He was born in the Parish of Dymock, Gloucestershire, and was educated at Ross Grammar School and at Balliol College, Oxford, but never received a degree. His charity took the form very frequently of advancing money to a neighbor who intended to build, decorate, or alter, with the understanding that Kyrle should plan the work. In 1693 he leased a bit of ground in Ross for 500 years and made it a public park. The Kyrle Society, named after him, was founded in 1875; its aim is to better the common people, by laying out parks, giving concerts, and promoting house decoration and window gardening.

KYTHERA, kith'ē-ra. See CERIGO.

KYUSHU, kyū'shū. The southernmost of the four principal islands of Japan. See KIUSHU.

KYOTO



ENTRANCE TO TEMPLE OF CHION-IN

L

L THE twelfth letter of the English alphabet. Its form is derived from the North Semitic *L*, which became the Greek λ , and then, through the Latin, *L* (See ALPHABET.) The Greek name of the letter, *lambda*, may represent an Aramaic pronunciation of *lamed* with the emphatic ending *d*, or a Greek lengthening for the sake of euphony, or possibly a non-Semitic original name of the sign. The Hebrew *lamed* has been usually supposed to mean an oxgoad, because there is, in Judg. iii. 31, the solitary occurrence of a word *malmad*, which from the context has been taken to mean an oxgoad. This meaning, however, is extremely doubtful.

Phonetic Character. In general *l* is a semi-vowel, with a lateral character; it is made by a contact between the tongue and the roof of the mouth in the same general position as for *d*, *t*, *n*, but with a characteristic opening at the sides of the tongue, by which the breath escapes laterally. By differences in the position of the tongue are made the *l moullé* (palatal) of French and the lingual or cerebral *l* of Sanskrit. Popularly *l* is classed as a liquid with *m*, *n*, and *r*. In English the sound of *l* is very constant and, by virtue of its sonority and stability, is used with the value of a vowel in unaccented syllables, as *bottle*, *apple*. It is sometimes silent, as in *walk*, *calm*, *palm*. In other languages *l* is not so stable as in English. In Sanskrit *l* and *r* are almost alternative letters in older roots. In comparative philology an interchange of *l* and *d* is quotable, cf Lat *lacrima*, Gr. *δάκρυ*.

As a Symbol. In chemistry, *L* = *lithium*; in Roman notation, *L* = 50; \bar{L} = 50,000; in English money, *L* (written conventionally before the figures £) = pounds (from Lat. *libra*), as £2000 = 2000*L*.

LAALAND, *la'land*, or **LOLLAND**. An island of Denmark, in the Baltic Sea, between the islands of Falster and Langeland, separated from the first by the Guldberg Sund and from the second by the Langeland Belt (Map: Denmark, E 4). Area 447 square miles. The surface is very low, with a maximum 95 feet above the sea, and the coast line is broken. The soil is very fertile, and a considerable part is covered with forests. There are a few peat bogs. The chief occupation is agriculture. Maribo, the capital of the island, is connected by rail with the seaport of Nakskov, on the west coast, Brandholm and Rødby, on the north and south coasts respectively, and Nykjøbing, on the is-

land of Falster. Laaland forms, with Falster, the District of Maribo. Pop. (of the island), 1901, 70,596; 1911, 71,280.

LAAR, or **LAER**, *lär*, PIETER VAN (c.1600–60). A Dutch landscape and genre painter, called by the Italians Pietro dell' Elaeer, and also Il Bamboccio. He probably studied in France and Austria before he settled in Rome (1624), where he remained for 16 years. In that city he met Claude Lorrain and Poussin and founded a school of imitators, who were called bambocciate. His works are darkening rapidly, but his effects of light and shade are still notable. His subjects are landscapes or peasant scenes of a gay nature. He executed about 20 etchings of great merit, half of them of animals. There are old copies of many of his paintings. At Hampton Court in England, there are three of his paintings; and others are in Amsterdam, Cassel, Dresden, Florence, Munich, Prague, Vienna, St. Petersburg (Hermitage), Paris (Louvre).

LAAS, *läs*, ERNST (1837–85). A German philosopher and educator, born at Fürstenwalde. He studied theology first and then philosophy at Berlin under Trendelenburg and in 1872 became professor of philosophy at the University of Strassburg (newly organized in that year). His philosophy is positivism; his position comes near Hume's or, more exactly, between Comte's and John Stuart Mill's. His positivism admits logical principles to the same category with facts and perceptions. But his work is critical rather than constructive. His chief publication is *Idealismus und Positivismus* (1879–84), which exalts positivism at the expense of the idealism of Plato and Kant and puts a particular stress on the relation of his philosophy to ethics and pedagogics. His *Litterarischer Nachlass*, edited by Kerry (1887), contains these subdivisions: I, *Idealistische und positivistische Ethic*; II, *Oekonomische Mängel unseres nationalen Bildungswesens*; III, *Gymnasium und Realschule*. He wrote also: *Kant's Analogien der Erfahrung* (1876), *Der deutsche Unterricht auf höheren Lehranstalten* (2d ed., 1886); *Der deutsche Aufsatz in der oberen Gymnasialklassen* (3d ed., 1898). Consult Gjurits, *Die Erkenntnistheorie des Ernst Laas* (Leipzig, 1903), and P. Kohn, *Der Positivismus von Ernst Laas* (Bern, 1907).

LABADIE, *la'ba'de'*, JEAN DE (1610–74). A religious reformer and sectary. He was born at Bourg in Guienne, Feb. 13, 1610. He was educated by the Jesuits at Bordeaux, entered their order (1625), became priest (1635), and dis-

tinguished himself as a preacher. He urged the reform of what he deemed abuses in the Church, but, finding no encouragement in his order, he left it and joined the Fathers of the Oratory in 1639 and soon after the Jansenists. In 1640, appointed canon of Amiens, he made innovations, holding meetings for the reading of the Bible and administering the Lord's Supper in both kinds to the people. Finding himself in accord with Calvinism, in 1650 he became a Protestant and was for eight years pastor of the church at Montauban. In 1657 he was pastor in Orange and in 1659 in Geneva. In 1666 he became pastor of a Walloon church in Middelburg, Holland, but in 1669 went to Amsterdam, where his followers soon formed a distinct sect called Labadists. It included many of rank and education, among whom were two ladies, the learned Anna Maria von Schürman and the authoress Antoinette Bourignon. Expelled from the country as a Separatist, he went in 1670 to Herford, where he was protected by the Princess Elizabeth, who, through the influence of Anna Maria von Schürman, became a disciple. Driven from this place in 1674, he went to Bremen and then to Altona, where he died (Feb. 13, 1674). He left numerous works. The Labadists did not differ entirely from the Reformed church, but adhered to its doctrinal symbols. They were a set of mystics, who sought reform of life rather than of doctrine. They supported themselves by manual labor and, after the example of the primitive Church, held property in common; they laid great stress on the internal light as indispensable for the . . . of the Bible and rejected infant baptism and the observance of holy days. They honored the institution of marriage. After Labadie's death his followers settled in West Friesland, but made few converts, and in the . . . of the eighteenth century the sect . . . A few of them came to the United States and settled on the Hudson, but gained no permanence as a sect. Consult: Von Berkum, *De Labadie en de Labadisten* (2 vols., Sneek, 1851); B. B. James, "The Labadist Colony in Maryland," in *Johns Hopkins University Studies in History and Political Science* (17th series, no. 6, Baltimore, 1899), containing a bibliography; Dankers and Sluyter, *Journal of Jasper Danckaerts and Peter Sluyter, 1679-1680*, translated by H. C. Murphy (New York, 1913).

LABAND, lä'bänt, PAUL (1838-). A German jurist, born in Breslau and educated there and at Heidelberg and Berlin. In 1864 he went to Königsberg as professor and eight years afterward to Strassburg. His special provinces constitutional and commercial law, in 1886 he founded, with Stoerk, the *Archiv für öffentliches Recht*, and he was long editor of the *Deutsche Juristen-Zeitung*. His earlier works, on the sources of German law, include *Beiträge zur Kunde des Schwabenspiegels* (1861) and *Jura Prutenorum* (1866). More important are: *Das Budgetrecht nach den Bestimmungen der preussischen Verfassungsurkunde* (1871); *Das Finanzrecht des deutschen Reichs* (1873); and his masterpiece, *Das Staatsrecht des deutschen Reichs* (5th ed., 1911), which appeared in abbreviated form in Marquardsen's *Handbuch des öffentlichen Rechts der Gegenwart* (1883; 6th ed., 1912). *Direkte Reichssteuern* appeared in 1908.

LA BARCA, lä bär'kä. A town in the State of Jalisco, Mexico, situated east of Lake Cha-

pala and 60 miles southeast of Guadalajara, on the railroad between that city and Mexico (Map: Mexico, H 7). It is noted for its oranges. It was founded in 1529 by Nuño de Guzmán, and its streets were the scene of two battles in the Mexican War of Independence. Pop., 1900, 7101; 1910, 7437.

LABA'RIA. A Brazilian name for the powerful rattlesnake elsewhere described as bush master (q.v.).

LABARRAQUE'S (lä'bä'räks') **SOLUTION**, or **SOLUTION OF SODIUM HYPOCHLORITE**. A disinfecting and bleaching solution, obtained by mixing 150 parts of sodium carbonate (in solution) with 75 parts of calcium hypochlorite, or bleaching powder (in solution), making up with water to 1000 parts, and separating the precipitated mass. The liquid thus obtained has a pale greenish color, a faint odor of chlorine, and a disagreeable alkaline taste. Its specific gravity is 1.052. Its value as a disinfectant and as a bleaching agent is due to the chlorine which it contains. This, on being set free, unites with water and releases oxygen, an active bleaching and disinfecting substance. It is used as a gargle for sore throat, as a dressing for wounds, and in diluted form as a nose douche. It is also administered internally in small quantities in cases of zymotic diseases.

LA BARRE, lä bär', ANTOINE JOSEPH LE-FÈVRE DE (c.1625-88). A French naval officer and Governor of Canada. He was appointed Governor of Guiana in 1663 and in 1687 recaptured Cayenne from the Dutch and defeated the English in the Antilles. In 1682 he succeeded Frontenac as Governor of Canada, in which capacity he was conspicuous chiefly for cupidity and incompetence. He organized an expedition against the Seneca Indians in 1684 and proceeded, after much unnecessary delay, as far as La Famine, at the mouth of the Salmon River, in the present State of New York. Here, and at Fort Frontenac, across the lake, many of his soldiers were incapacitated for further service by malarial attacks, and, unable to proceed further, La Barre held a conference with a delegation of Iroquois on September 4 and agreed to a treaty of peace unsatisfactory to Louis XIV. Late in the same year, accordingly, he was recalled to France. La Barre was a steadfast opponent of La Salle (q.v.). Consult Francis Parkman, "Count Frontenac and New France under Louis XIV," in *France and England in North America*, part v (Boston, 1903), and "La Salle and the Discovery of the Great West," in *France and England in North America*, part iii (ib., 1907).

LABARRE, Louis (1810-92). A Belgian publicist and journalist, born at Dinant. His real name was Labar. He was a schoolmaster there until the revolution of 1830, when he came to the front as a Radical Republican, contributing to the *Courrier Belge*, the *Bombe*, the *Charivari Belge*, and the *Paris National*. In 1836 his *Satires et élégies* appeared. As editor of the *Brussels Nation* (1848), he had Mazzini, Kossuth, Hugo, Louis Blanc, Charras, Raspail, and others for contributors, and he himself was imprisoned 13 months for his defense of Orsini. He wrote strongly against Napoleon III in such works as *Napoléon III et la Belgique* (1860) and was the author of a comedy, *La bourse des amis* (1862), a five-act drama, *Montigny à la cour d'Espagne* (1864), an appreciatively critical biography of his friend the

painter Wiertz (1866), and collections of verses.

LAB'ARUM (possibly from Cantabrian *laburu*, having four members, or Basque *labarva*, standard). The famous standard of the Roman Emperor Constantine, designed to commemorate the miraculous vision of the cross in the sky, which is said to have appeared to him on his way to attack Maxentius and to have been the moving cause of his conversion to Christianity. As Eusebius describes it (*Vita Constantini*, i, 31), it was a long spear, overlaid with gold, forming the figure of a cross by means of a transverse bar at the top, from which hung a square purple banner, embroidered with gold and precious stones. At its summit was a gold wreath, inclosing the monogram of Christ formed of the first two letters of his name, X and P, intersecting each other. It was therefore a modification of the usual cavalry standard, the monogram merely taking the place of the emblem of the legion, such as a hand or an animal. This standard became the general one of the Roman army under Constantine and his successors. Its keynote, the sacred monogram, was also placed on the soldiers' shields and came into temporary use as a symbol of Christianity on tombs and works of art.

LA BASSÉE, là bā'sā'. A town of northern France, in the Province of Nord, 13 miles southwest of Lille. Pop, 1911, 4707. A series of canals gives it water communication with the coast. It is famous for the number and variety of its fairs. The chief productions of the town are oil, sugar, pottery, chicory, soap, tiles, and cotton goods. In the European War of 1914 La Bassée was the centre of continuous fighting. It was occupied by the Germans in their first offensive movement against France, and the battle for Calais was fought along a line from Ypres to La Bassée, in which encounter most of the allies' fighting force was composed of Anglo-Indian troops. Terrific artillery duels, followed by determined infantry attacks and counterattacks from trench to trench, continued throughout the winter of 1914-15. See WAR IN EUROPE.

LABAT, là'bā', JEAN BAPTISTE (1663-1738). A French missionary and author, born in Paris. He became a Dominican in 1685, was professor at Nancy in 1687, and in 1693 was sent to the Antilles. He spent two years at Martinique and returned thither after a stay in Guadeloupe, where he did much for the industrial development of the country and was appointed procureur général. He was frequently used as diplomatic agent by the governors of the Antilles, explored the archipelago, and in 1703 founded the city of Basse-Terre in Guadeloupe. The White Father, with a company of 60 negroes, did marvels in the defense of the island against the English. War and fever had so cut down the missionary force that in 1705 Labat returned to Europe, where his superiors detained him at Rome, Civitavecchia, and Paris until his death. His *Nouveau voyage aux îles de l'Amérique* (1722) is considered the most original of his works of travel. He also wrote *Voyage en Espagne et en Italie* (8 vols., 1730).

LABAZARES, G. DE. See LAVEZARIS, G. DE. **LABBE**, lāb, PHILIPPE (1607-67). A French Jesuit scholar. He was born at Bourges, entered the Society of Jesus (1623), attained high rank as a scholar, and distinguished himself by his collection of the acts in the Church councils

from 34 to 1417 (18 vols., Paris, 1672; completed by Cossart, vol. xviii added by Jacobatius), a work which served as the basis of the later collections of Hardouin and Mansi. A full list of his numerous writings is given in Backer, *Bibliothèque des écrivains de la compagnie de Jésus* (Paris, 1876; new ed., vols. i-ix, Brussels, 1890-1900).

LABÉ, là'bā', LOUISE, known as La belle Cordière (the beautiful ropemaker) (?-1566). The most celebrated of the sixteenth-century French women poets. She was born at Lyons between 1515 and 1524 and was highly educated. At the age of 18 she fought at the siege of Perpignan (1542) as Capitaine Loys. About 13 years after this she married Aymon Perrin, a rope manufacturer of Lyons, and her salon became a meeting place for cultivated people. She was the subject of much scandal, most of which seems to have been undeserved. Besides poems, she wrote a prose play, *Débat de folie et d'amour*. The first edition of her works appeared in 1555, and there was one in 1887. Consult Gonon, *Documents historiques sur la vie et les mœurs de Louise Labé* (Lyons, 1844), and Edith Sichel, *Women and Men of the French Renaissance* (New York, 1911).

LA BÉDOLLIÈRE, là bā'dō'lyār', EMILE GIGAULT DE (1812-83). A French publicist and historian, born at Amiens and educated at the Ecole des Chartes. After the publication of his first book, *Vie politique du marquis de La Fayette* (1833), he was engaged in compilation, translation, and journalism. His later works include: *Beautés des victoires et des conquêtes des Français* (2 vols., 2d ed., 1847); *Histoire des mœurs et de la vie privée des Français* (1847); *Histoire de la garde nationale* (1848); *Histoire d'Italie* (1859); *Le nouveau Paris* and *Histoire des environs du nouveau Paris* (1860); *Histoire de la guerre du Mexique* (1861-68); *Londres et les Anglais* (1862); *Le domaine de Saint-Pierre* (1865); *Histoire complète de la guerre d'Allemagne et d'Italie* (1866); *Histoire de la guerre 1870-71* (1872).

LABÉDOYÈRE, là'bā'dwā'yār', CHARLES ANGÉLIQUE HUGHET, COUNT (1786-1815). A French soldier. He was born in Paris and entered the army at an early age. He was adjutant to Marshal Lannes in Spain in 1808, received a wound at Tudela, joined the army in Germany after his recovery, was Murat's adjutant at the battle of Aspern, and fought well at Borodino, the Beresina, Lützen, and Bautzen. Returning to France in the autumn of 1813, he received the command of a regiment and was posted near Vizelle when Napoleon returned from Elba. He immediately joined him, and his desertion of the Bourbons was quickly followed by that of the whole army. As a reward, Napoleon made him lieutenant general and a peer of France. He fought with great gallantry at Waterloo. He intended to emigrate to America after the second return of the Bourbons, but imprudently went to Paris, was seized, tried, and shot (Aug. 19, 1815).

LA'BEL (OF. *label*, *labeau*, *lambel*, *lembel*, *lambeau*, Fr. *lambeau*, shred, from OHG. *lappa*, Ger. *Lappen*, rag, AS *leppa*, *lappa*, Eng. *lap*; probably connected with Gk. *λόφος*, *lobos*, lobe, Lat. *labi*, to fall, Skt. *lamb*, *ramb*, to hang down). In heraldry, the mark of cadency which distinguishes the eldest son in his father's lifetime. See CADENCY.

LABEL. In its ordinary sense, a ribbon or other narrow slip, as of cloth, parchment, or paper. In law, specifically applied (a) formerly to a narrow strip of paper attached as a rider to a document to supplement it, as a codicil to a will; (b) a strip of material attached to a deed to carry the seal; (c) the usual meaning now—a strip or small piece of paper, sheet metal, cloth, or other material, attached to a package to describe it in some way, as to tell its nature, the maker, the weight, destination, or any other information concerning it. A label is in itself not a trade-mark, although a trade-mark may consist of a label which has the qualities essential to constitute a trade-mark. A label as such cannot be patented or copyrighted unless it has those qualities that bring it within the subject matter for which the patent or copyright is granted. Practically speaking, this protection is afforded in any case where likelihood of fraud or deception of the public as a result can be shown. Of course, if the reading matter or design of the label is protected by copyright or patent, the usual protection against infringement will be afforded. See **TRADE-MARK**; **COPYRIGHT**; **PATENT**, and consult the authorities there referred to. See also **UNION LABEL**.

LA BELLA, là bĕl'la (It., the beauty). A renowned painting by Titian in the Pitti Gallery at Florence, considered the best of his female portraits. It was painted about 1535 and is probably an ideal representation of Eleonora, Duchess of Urbino. See **TITIAN**.

LA'BEŌ, MARCUS ANTISTIVS (c.53 B.C.—17 A.D.). A Roman jurist. He was the son of Pacuvius Antistivus Labeo, a lawyer of marked Republican sentiments, who killed himself after the battle of Pharsalus. The son was also a Republican and, according to Dio Cassius and Suetonius, dared to oppose Augustus. He was probably an innovator in private law, but very conservative in constitutional law. He had some fame as a philologist and applied his knowledge of old Latin forms to legal difficulties. He did not himself form a school, although he was strongly opposed to Ateius Capito; but his pupil Proculus was founder of the Proculian school. Down to the time of Hadrian he was regarded as the chief authority on law. He wrote *Libri ad Edictum*, a commentary on the edicts of the praetors and of the curule aediles, *Libri Posteriorum*, published after his death, a systematic exposition of the common law, and *Probabilium Libri Octo*, a collection of definitions and axiomatic legal propositions. His works are largely quoted in the Pandects (q.v.), and these excerpts are edited by Bremer, *Jurisprudentiæ Antehadrianæ quæ Supersunt* (1898). Consult Pernice, *M. A. Labeo: Das römische Privatrecht im ersten Jahrhundert der Kaiserzeit*, vols. i–iii (Halle, 1873–92; Sohm-Ledlie, *Institutes of Roman Law* (2d ed., Oxford, 1901); Teuffel, *Geschichte der römischen Literatur*, vol. ii (6th ed., Leipzig, 1910).

LABERIUS, là-bĕ'rĭ-ŭs, DECIMVS (105–43 B.C.). A Roman knight and celebrated writer of mimes (farces; see **MIME**). Having, as it is thought, offended Julius Cæsar, he was ordered by him to appear in person on the stage, at the age of 60, and to act in one of his own mimes—a great indignity to a Roman, since actors had no civil rights, indeed were usually slaves, freedmen or foreigners (45 B.C.). In delivering

the prologue and again in parts of the play Laberius boldly inserted verses expressing his sense of the insult. Cæsar, partly in retaliation, awarded the dramatic prize to Publilius Syrus, the rival of Laberius; but he gave back to Laberius the equestrian rank (see **EQUESTRIAN ORDER**) which he had forfeited by appearing as actor. The fragments of Laberius are collected by Otto Ribbeck in the second volume of his *Comicorum Romanorum Fragmenta* (Leipzig, 1873). Consult Schanz, *Geschichte der römischen Literatur*, vol. i (3d ed., Munich, 1909).

LA'BIALS (ML. *labialis*, relating to the lip, from Lat. *labium*, lip; connected with Pers. *lab*, lip, and probably with AS. *lyppa*, Eng. *lip*). Those sounds whose articulation is chiefly determined by the lips. The mutes *p*, *b*, the nasal *m*, and the semivowel *w* is the list given by most phoneticians. In articulating *f* and *v* the upper teeth and lower lip are brought together, so these are called labiodentals. The vowels *oo* and *o* are often classified among the labials, as they involve a rounding of the lips. Consult Rippmann, *Sounds of Spoken English* (London, 1910).

LABIATÆ, là'bĭ-a'tĕ (Neo-Lat. nom. pl, from Lat. *labium*, lip), the mint family. A family of herbaceous or half-shrubby dicotyledonous plants, containing about 150 genera and 3000 species, mostly natives of temperate climates. They have four-cornered stems; opposite branches and leaves, without stipules; flowers generally in cymes, heads, or whorls, but sometimes solitary; calyx inferior, 5 or 10 toothed or two-lipped; corolla hypogynous, two-lipped, the lower lip three-lobed, stamens four, two long and two short, or by abortion only two, inserted into the corolla; ovary deeply four-lobed, seated in a fleshy disk, each lobe containing a single ovule; style simple, with a bifid stigma. fruit one to four achenia, inclosed within the persistent calyx. The conspicuous feature of the family, which appears in its name, is the bilabiate corolla, the special type of irregularity (q.v.) which prevails among the Sympetalæ. A general characteristic of this family is an aromatic odor due to a volatile oil, which in many species is very agreeable and makes them garden favorites; in others it is unpleasant. Many are natives of America; some are weeds, some are used in medicine, some for perfumes; others in cookery for flavoring; one (*Stachys*) yields edible tubers. Mint, marjoram, rosemary, lavender, sage, basil, savory, thyme, horehound, balm, patchouli, germander, and dead nettle are examples of this family. The principal genera in the United States are *Teucrium* (germander), *Scutellaria* (skullcap), *Marrubium* (horehound), *Nepeta* (catnip), *Physostegia* (dragonhead), *Leonurus* (motherwort), *Stachys* (hedge nettle), *Salvia* (sage), *Monarda* (horsemint), *Hedeoma* (pennyroyal), *Satureja* (calamint), *Pycnanthemum* (basil), *Thymus* (thyme), *Lycopus* (water horehound), and *Mentha* (mint). See Plate of **MINT**.

LABICHE, là'bĕsh', EUGÈNE (1815–88). A French dramatist, born in Paris, May 5, 1815. His first drama, *M. de Coyllin* (1838), was a failure, but for nearly 40 years he continued to write farces and comedies, many of which attained great success, though unpublished. In 1876 he withdrew to Normandy, wealthy, but with no thought of fame. The higher literary recognition of Labiche as a literary artist,

whereas many had thought of him as a mere purveyor of fun, seems to have come first from his friend and fellow dramatist, Emile Augier. Labiche gathered his best in 10 volumes (1879) and found himself famous. In 1880 he entered the Academy, but never again essayed the stage. Some of his plays—*Le voyage de M. Perrichon* (1860), *La poudre aux yeux* (1861), *Les petits oiseaux* (1862), *Moi* (1864), *Le chapeau de paille d'Italie* (1851)—are pure comedies of a high order. In others, like *La cagnotte*, there is riotous fancy, and the humor is a battledore and shuttlecock of dialogue, not of situation and character. Labiche wrote usually in collaboration with one or another playwright; but the genius of the comedies is always his, and from a literary point of view the others' part is negligible. After his death French farce fell into its former coarseness. Consult: Augier, "Preface" to Labiche, *Théâtre complet* (10 vols., Paris, 1879); Hippolyte Parigot, *Le théâtre d'hier: études dramatiques* (ib., 1893); E. J. H. Pailleron, Eugène Labiche, in his *Pièces et morceaux* (ib., 1897); Eugen Zabel, *Zur modernen dramaturgie* (2d ed., 2 vols., Oldenburg, 1899); Brander Matthews, *French Dramatists* (4th ed., New York, 1905); Jules Woguc, "Labiche, romancier," in *Revue*, vol. cv (6th series, Paris, 1913).

LABID IBN RABIA, lā-bēd' 'b'n ra-bē'a, ABU 'AḲĪL (c.560-c.661). An Arabian poet, who lived at Medina after his conversion to Islam and died at Cufa. His poems were very popular and at the same time were highly esteemed by the grammarians; the commentary of al-Tusi on a score of them is preserved. As he was a great warrior in his youth, most of his poems refer to tribal disputes. One of his productions was received in the *Mu'allakāt*, edited by De Sacy (1816), by Peiper (1828), and without commentary by Abel in *Die sieben Mu'allakāt* (Berlin, 1891). The best translation is by Nöldeke, in the *Sitzungsberichte* of the Vienna Academy of Sciences (1900). Labid's *Diwān* was first edited by Yusuf al-Khalidi (Vienna, 1880). A. Huber had prepared an edition and a translation of Labid's poems. After his death these were published in two separate volumes by C. Brockelmann (Leyden, 1891). Consult Sloane, *The Poet Labid* (Leipzig, 1877), and Huber, *Das Leben des Labid* (Leyden, 1887).

LABIENUS, lā'hī-ē'nus, TITUS (98-45 B.C.). A Roman tribune in 63 B.C., when Cicero was consul, a lieutenant of Cæsar in the Gallic War, and afterward a prætor. In 63 B.C. he carried a plebiscite, through which Cæsar later was able to secure the office of pontifex maximus. In 54 B.C. he twice defeated the Treviri and in 52 distinguished himself in the campaign against Vercingetorix (q.v.), when Cæsar went from Gaul to Italy during his Gallic campaign, he left Labienus in charge in Gaul. When the Civil War broke out, he sided with Pompey and treated with cruelty Cæsar's soldiers who fell into his hands at Dyrrhachium. After the defeat at Pharsalus he went to Africa and thence, after the defeat at Thapsus, to Spain, where he fought against Cæsar at Munda; there, in a panic, his troops were routed, and he fell (45 B.C.).

LABILLARDIÈRE, lā'bē'yār'dyār', JACQUES JULIEN HOUTON DE (1755-1834). A French naturalist. He was born at Alençon and studied botany and medicine at Montpellier. He traveled widely in England, in Piedmont, in the

chief islands of the Mediterranean, and in Palestine. In 1791 he was sent on the La Pérouse expedition. He explored Tenerife, the Cape of Good Hope, and Van Diemen's Land and after various stops in the south seas went to Java, where he was held prisoner by the Dutch (1793-95). He was elected to the Institute in 1800. He became famous for his researches in the natural sciences and published *Icones Plantarum Syriæ Rariorum Descriptionibus. Illustratæ* (1791-1812), *Relation du voyage à la recherche de La Pérouse* (1800), and several other works, besides numerous papers on various scientific subjects.

LABLACHE, lāblāsh', LUIGI (1794-1858). A celebrated Italian operatic singer, born in Naples in 1794, whither his mother and his father, who was French, had fled from Paris during the Revolution. His voice, a deep bass, was of wonderful range, flexibility, and volume; and his acting, particularly in the characters of Figaro and Leporello, was almost as remarkable as his singing. His first engagement as a singer was at the San Carlino Theatre at Naples in 1812; he appeared afterward in La Scala, Milan, and in Vienna, and also at the San Carlo, in Naples, during the intervals of the Vienna season. On his first appearance in London, in 1830, he met with immediate success, and for a number of years he resided alternately in the French and English capitals, singing during both the Paris and London seasons. He died at Naples. Consult Couailhac, *Galerie des artistes dramatiques de Paris* (Paris, 1841).

LA BOÉTIE, lā bō'ā'sé', ETIENNE DE (1530-63). A French translator from the Greek and a political thinker, known chiefly through the friendship of Montaigne (q.v.) for him. His youthful *Contre un* is a democratic declamation, the first republican protest to spring from the French Renaissance. La Boétie translated the *Economics* of Xenophon. The latest edition of his *Works* is by Bonnefon (Bordeaux, 1888). Consult Bonnefon's chapter on Montaigne in Petit de Julleville, *Histoire de la langue et de la littérature française*, vol. iii (Paris, 1896-1901).

LA BOHÈME, lā bō'am' (Fr., The Bohemian Girl). 1. An opera by Puccini (q.v.), first produced in Turin, Feb. 1, 1896; in the United States, May 16, 1898 (New York). 2. An opera by Leoncavallo (q.v.), first produced in Venice, May 6, 1897.

LA'BOR (OF. *labor*, *labour*, Fr. *labour*, from Lat. *labor*, toil). Human activity put forth as a means to the production of goods. Two forms, forced or slave labor, induced by the fear of punishment, and contract or free labor, induced by the desire for goods as a means to the satisfaction of wants, are to be sharply distinguished.

The earliest civilizations were based on systems of slave labor, the slaves being either a subject people dominated by a conquering race or prisoners of war. Such systems led inevitably to the degeneration of the governing class and were overthrown as soon as the peoples establishing them came in contact with more vigorous races which had been forced by circumstances to depend more upon their own exertions. During the Middle Ages, and even down to modern times in some of the countries of Europe, the system of labor was a modified form of slavery known as serfdom. Serfs were bound to the soil and compelled to obey their feudal lords in

all important matters. At the same time they had certain customary rights and privileges which the lords, on their side, were bound to respect. Although adapted to the conditions of a slowly developing agricultural community, serfdom was not at all suited to a manufacturing or commercial people. For this and other reasons it gave place to the system of free labor, at first in England during the fifteenth century, then in France, Germany, and the other countries of western and central Europe during the eighteenth and early nineteenth centuries; and finally in Russia during the latter half of the nineteenth century.

With the discovery of America and the opening up of new lands suited to a semitropical agriculture, a new form of slavery was devised, that of African negroes, brought across the ocean in slave ships and made to bear the brunt of the heavy labor connected with the production of tobacco, cotton, and other crops. In the United States there ensued a period of development in which the country was "half slave and half free," which proved intolerable to both sections, and culminated in the Civil War and the subsequent abolition of slavery.

The different conceptions of free labor which have played a part in the development of economic thought can best be indicated by reviewing briefly the views of leading economists. It was characteristic of the Mercantilist writers to ignore labor and the other factors in the production of wealth and to ascribe exaggerated importance to the precious metals. The Physiocrats appreciated more truly the function of the precious metals; but they also gave slight attention to labor, as such, because they ascribed undue importance to the part which land and natural forces play in production. They even went so far as to characterize manufacturing and mercantile labor as unproductive (*sterile*) and to declare that agricultural labor is alone productive, since it alone creates a surplus of goods over and above those needed to satisfy the laborer's own necessities. Adam Smith, on the other hand, following Petty and Hume, represented labor as the principal factor in the production of wealth. In his treatment the division of labor is made the chief cause of industrial progress, and the part which nature plays in production is passed over with scant consideration. He distinguished productive from unproductive labor by defining the former as activity which realizes itself in some material form (i.e., commodities rather than services). Nevertheless, he followed the Physiocrats in ascribing peculiar productiveness to agricultural labor, for, he says, in agriculture "nature labors along with man." Ricardo gave his attention primarily to the distribution of wealth and based his theory on the proposition that value is always in proportion to the *quantity* of labor. He added little to Adam Smith's treatment of labor as a factor in production, except to point out that nature assists man in all his industrial pursuits and not merely in farming. John Stuart Mill went a step further towards giving scientific precision to economic analysis by pointing out that labor does not create commodities, but merely changes their forms and in so doing creates utilities.

The progress of economic thought since the days of Ricardo and Mill has been along two distinct lines. Socialists, led by Karl Marx, have accepted the proposition that value tends

to be in proportion to quantity of labor, and have deduced from it their "exploitation theory," i.e., the theory that labor, which creates all value, is deprived of the larger part of its products through the agency of the legalized but unjust institution of private property in land and capital. The other line of development has been away from the view that labor alone regulates value, and towards the conception that value is determined primarily by marginal utility, which measures the intensity of the demand for goods. Economists accepting the latter view recognize that value tends under certain conditions to correspond to the cost of production, as Ricardo argued, but find in the latter remuneration not merely for the sacrifice involved in labor, but also for that involved in saving and investing income in preference to spending it. Value, even under conditions of free competition, does not tend, therefore, to be in proportion to quantity of labor, but to quantities of labor and capital.

John Stuart Mill's observation that labor creates utilities, not matter, exposed the artificial character of Adam Smith's distinction between productive and unproductive labor. It is now recognized on all sides that the labor of physicians, lawyers, actors, etc., is just as productive as the labor of farmers and mechanics. All add to society's fund of consumable utilities, and this is the essence of production. To be sure, the utilities created by the actor are consumed as they are produced by his listening audience; but in this they differ only in degree from the utilities created by the fishman or the greengrocer, whose products must also be consumed promptly to be enjoyed at all. If permanence of results is the test of productiveness, the labor of all three must be considered unproductive in comparison with the labor of the pyramid builder. In short, the distinction which Adam Smith had in mind is more happily and accurately represented as pertaining not to the relation between labor and its products, but to that between the products themselves and further production. Whether products are destined to become capital (i.e., direct aids to further production), the means of maintaining the economic efficiency of workmen (i.e., indirect aids to further production), or the means of mere idle gratification, is still a matter of considerable importance in economics, but one not pertaining to labor.

With the broadening of the conception of productive labor, more attention has been given to the interdependence of different groups of workers. It is recognized that unskilled manual laborers owe much to skilled or mechanical laborers, and that both would be worse off but for the guidance and direction of the business men or *entrepreneurs* who perform the "labor of management." At the same time there is still a tendency to draw a distinction between workers who work for wages and independent business or professional men who work for profits. When such phrases as "the laboring class," "the labor problem," "the labor movement," "labor laws," etc., are used, reference is made to the wage-earning class, whose rise to its present prominence dates from the industrial revolution at the end of the eighteenth and the beginning of the nineteenth centuries. The most significant phases of this development have been the growth of labor organizations intended to promote the interests of the wage-

earning class (see TRADE-UNIONS) and the enactment of laws regulating the hours and other conditions of employment of certain members of this class, particularly women and children. See LABOR LEGISLATION.

Other aspects of labor to which increasing attention is given by economists are the circumstances which determine the worker's industrial efficiency. It is now recognized that the food, clothing, housing, etc., of the working classes are important, not merely because they affect the happiness of those classes, but because upon them depend the amount and quality of the work that can be performed. The standard of living influences wages not merely through the control which it may exercise over the rate at which population increases, but also because it determines the standard of efficiency. It is this consideration that has done most to transform economics from the "dismal science" that was taught by the classical economists to the hopeful study that is pursued to-day. If rising wages bring with them increased efficiency, which becomes in turn a cause of still higher wages, there is no assignable limit in a progressive country to the possible progress of the working classes.

The progress of economic thought is shown also in the greater attention that is now paid to the psychological side of labor. Adam Smith asserted that in a day's labor the laborer "must always lay down the same portion of his ease, his liberty, and his happiness." Later writers assumed also that labor was disagreeable, if not painful, and would only be undertaken in the hope of reward. Professor Jevons first stated clearly that different kinds of labor and different hours of labor involve different degrees of sacrifice. He emphasized the thought that some labor is a source of positive pleasure to the laborer, and that it is usually only because labor is carried to excess that it becomes painful. Following this lead, later writers have begun to speculate in regard to the relations that would prevail in an industrial society in which excessive hours were cut off and labor-saving devices were utilized for the performance of all tasks that are inherently disagreeable. Under such ideal conditions it is obvious that all labor would be pleasurable, and that the only ground for distinguishing different kinds of labor or different hours of labor would be that some would afford more pleasure to the laborer than others. Men would be paid in such a society, not because they did disagreeable things, but because they produced what men want, useful goods, and to do so refrained from other lines of activity or relaxation that promised even more pleasure than the work in hand. Production, instead of figuring in the economic calculus as a sum of pains to be weighed against the pleasures of consumption, would appear in such a society as a sum of pleasures to be added in determining the full joy of living. It is hardly necessary to point out that such a condition is far in advance of the real situation even in the most progressive communities; but the world has certainly advanced to a stage in which economists and other thoughtful people have definitely discarded the idea that labor is a "curse" and in its place have set up the ideal of labor as a necessary means to the fullest self-realization and self-development of the laborer. See LABOR LEGISLATION; MACHINERY, ECONOMIC EFFECTS OF;

DIVISION OF LABOR; TRADE-UNIONS; WAGES; COOPERATION; PROFIT SHARING; ETC.

LABOR, AMERICAN FEDERATION OF. A non-secret confederation of trade unions, having for its object the improvement in the conditions and wages of labor, the establishment of self-governing unions of wage-workers in every trade and legitimate occupation where none now exists; the formation of public opinion by the agencies of platform, press, and legislation; and the furtherance of a civilization based upon industrial progress, by securing to the toilers a reduction in the hours of labor. The American Federation of Labor originated in an attempt to found a general organization of American workmen, distinct from the Knights of Labor, on a trade-union basis. A preliminary convention was called by the Knights of Industry and the Amalgamated Labor Union—the latter composed largely of seceders from the Knights of Labor—and met in Terre Haute, Ind., Aug. 2, 1881. The first convention officially recognized as such met at Pittsburgh in November, 1881, at which the name of the Federation of *American* Trades and Labor Unions of the United States and Canada was adopted. This federation merged itself with an independent trade-union congress held at Columbus, Ohio, Dec. 8, 1886, when the present name and organization were adopted. The aggregate membership of affiliated unions, excluding duplicates, is about 2,100,000. The American Federation of Labor has practically taken the place of its former rival, the Knights of Labor (q.v.). Since 1900 the Socialistic elements in the American Federation of Labor have endeavored to control the policy of the association. Failing in this, a large number of the Socialists withdrew in 1905 and joined with the Trade and Labor Alliance, the American Labor Union, and other Socialistic associations, in forming a rival organization the Industrial Workers of the World (q.v.). In 1906, on the ground that Federal labor laws were not properly enforced, and that Federal legislation showed a tendency to disregard the interests of labor, the American Federation decided to enter upon political activity, endorsing or working against candidates for election to Congress according as they had proven friendly or hostile to organized labor. The Congress of the United States in 1914 passed a law demanded by the American Federation of Labor, recognizing the principle that the labor of a human being is not a commodity or an article of commerce. The officers in 1914 were: president, Samuel Gompers; secretary, Frank Morrison; treasurer, John B. Lennon. Its organ is the *American Federationist*, published in Washington. See LABOR ORGANIZATIONS; STRIKES; INJUNCTION; ETC.

LABOR, BUREAUS OF. The first bureau of statistics of labor in the world was created by Act of the Massachusetts Legislature in June, 1869. While political expediency may have had influence in establishing this bureau, its functions were defined by law for the general good of the State as follows:

"The duties of such bureau shall be to collect, assort, systematize, and present in annual reports to the Legislature, on or before the first day of March in each year, statistical details relating to all departments of labor in the Commonwealth, especially in its relation to the commercial, industrial, social, educational,

and sanitary condition of the laboring classes, and to the permanent prosperity of the productive industry of the Commonwealth." This expresses the purpose of every State bureau of similar character in this country, the United States Bureau of Labor (later the Department of Labor), and similar offices in other nations.

The United States Department of Labor was organized in 1885 as one of the bureaus of the Department of the Interior, and Carroll D. Wright, who had been signally successful as chief of the Bureau of Statistics in Massachusetts, was selected as Commissioner. He declared its policy to be chiefly educational, by judicious investigations and fearless publication thereof to enable the people to comprehend more clearly and fully problems which vexed them. In 1889 the bureau became the Department of Labor, in 1903 the Department of Commerce and Labor, and in 1913 again the Department of Labor (see below). Since its organization it has issued annual reports, many special reports, and the bimonthly bulletins. The more important annual reports have been the following Industrial Depressions, Convict Labor, Strikes and Lockouts, Railroad Labor, Cost of Producing Iron and Steel and Cognate Products, Industrial Education, Building and Loan Associations, Work and Wages of Men, Women, and Children, Economic Aspect of the Liquor Traffic, Hand and Machine Labor, Water, Gas, and Electric-Light Plants under Private and Municipal Ownership, Wages in the Principal Countries, Trade and Technical Education, Cost of Living and Retail Prices, Wages and Hours of Labor. The special reports deal with similar topics. Congress now appropriates more than \$175,000 annually for the administration of the department, exclusive of printing.

Thirty-nine of the States and Territories of the United States have offices similar to that initiated in Massachusetts in 1869. Thirteen of the State bureaus of labor publish a biennial report, and 18 an annual. The Association of Officials of Bureaus of Labor Statistics of America meets annually to promote the objects of the bureaus by discussing methods and presenting subjects for investigation. The Federal and State bureaus have published over 400 volumes. Several of the State bureaus conduct free employment agencies, notably those of New York and Connecticut, while the inspection of factories and mines is an important function of many of them.

Increased authority has recently been granted a number of State bureaus for conciliation and arbitration in labor disputes, by providing for special commissioners under the direction of the bureaus. The bureaus have been kept free from partisanship, and the exact information they have given has been extremely valuable in adjustments of labor difficulties.

France was the first European country to follow the example of the United States. A bureau for the collection of statistics and information concerning labor was created in 1891 and has become the general statistical bureau of the country.

In 1892 Germany established a labor commission which possesses to a large extent the permanency of a labor bureau. It has published more than 10 volumes of reports giving the results of its investigations relating to the condi-

tions of labor in various industries. In 1893 a labor department under the direction of a commissioner for labor was instituted in connection with the Board of Trade in England, and its duties are similar to those of other countries. Austria was the last of the continental countries to organize a bureau. This was done in 1898 and placed under the Ministry of Commerce. Belgium, Italy, Sweden, New Zealand, New South Wales, the Dominion of Canada, and Ontario also have bureaus. Some of these are largely employment bureaus, others concern themselves chiefly with publishing statistics, but all are modeled more or less closely after the American plan.

Bibliography. *Proceedings of the Association of Officials of Bureaus of Labor Statistics of America* (Topeka, 1883-); Wright, "The Working of the Department of Labor" and "The Value and Influence of Labor Statistics," in *Monographs on Social Economics*, vols. i, ii (Washington, 1901); annual reports, special reports and bulletins of the United States Bureau of Labor (Washington), "Labor Laws of the United States," in *Report of United States Bureau of Labor, 1907* (ib., 1908), publications of the bureaus of labor of individual States; reports of Labor Department of England (London); Office du Travail, France (Paris), Kommission für Arbeiterstatistik, Germany (Berlin); Secretariat Ouvrier, Switzerland (Bern), Ufficio del Lavoro, Italy (Rome); and similar agencies of various states and countries.

LABOR, DEPARTMENT OF. One of the executive departments of the United States government, created by Act of Congress of March 4, 1913, and presided over by a secretary, who is a member of the cabinet, but not one of the officers in line of succession to the presidency. His salary and tenure are the same as those of the other members of the cabinet. The Act of Congress creating the Department of Labor charges it with the duty of promoting the welfare of the wage earners of the United States, improving their working conditions, and advancing their opportunities for profitable employment. The following bureaus were transferred from the former Department of Commerce and Labor to the new Department of Labor: the Bureau of Immigration, the Bureau of Naturalization, the Bureau of Labor (to be known thereafter as the Bureau of Labor Statistics), and the Children's Bureau. The Secretary of Labor is given power to act as mediator and to appoint commissioners of conciliation in labor disputes whenever he judges this to be in the interest of industrial peace. He is also required from time to time to make such special investigations as the President or Congress may require, or as he may deem necessary.

LABOR, HARD. See **HARD LABOR.**

LABOR, lă'bôr, JOSEF (1842-). An Austrian composer and organist, born in Horowitz (Bohemia). While yet a child, he became totally blind and was educated at the Vienna Institution for the Blind. At the same time he studied music under Pirkhert and Sechter at the Conservatory. In 1863 he made his début as pianist in Vienna, where his soulful playing met with such warm recognition that he undertook tours of Germany, France, Russia, and England. In 1875 he began to study the organ and after 1879 toured as an organ virtuoso with immense success. In Austria he is

regarded as the unrivaled master of his instrument. He published a concerto for piano and orchestra, a piano quintet, a piano trio, a violin sonata, pieces for piano and for organ, and choruses.

LABOR, KNIGHTS OF. See **KNIGHTS OF LABOR.**

LABOR AND CAPITAL, RELATIONS OF. The evolution of the relations between employers and employees, or in the current phrase, capital and labor, presents a series of characteristic phases corresponding with the degree of industrial development. 1 In the first phase the labor contract is determined by direct negotiation between the employer and the individual workman. This is the purely competitive situation premised in classical economics, and to a certain extent in the common law of Anglo-Saxon communities. It is characteristic of an early stage in the development of industry, attended by influx of workers from the country to the city, or by emigration from nonindustrial to industrial nations. It tends to reappear in older industrial states where new classes of workers are drawn into industry, as, e.g., women workers. While in appearance it safeguards the interests of both classes, competition among employers tending to raise wages as competition of workers tends to reduce them, in fact it leaves the worker practically at the mercy of the employer, since competition among employers for workers is rarely so keen as competition among workers for employment. 2 In the second phase laborers associate themselves in more or less permanent organizations, which endeavor to impose such conditions as seem desirable to them upon the individual employers, enforcing their demands through strikes and lockouts, the boycott, etc. This phase of organization is usually characterized by disorder and violence; in it the law is frequently invoked by the employer. 3. In the third phase the associations of the workmen are confronted by associations of employers. Usually after a period of bitter struggle a working agreement is reached, under which the terms of employment are fixed by negotiations between the labor unions on the one hand and the employers' associations on the other. Such negotiation is commonly denominated collective bargaining, to distinguish it from the plan of individual bargaining of the earliest phase of development. Sometimes it is described as conciliation, or even as arbitration. But these terms are properly confined to certain other aspects of the labor-capital situation to be described below. Collective bargaining has been attained in the greater part of the skilled trades and the higher factory employments in England. In the United States it covers a fairly wide range of industry, notably in coal mining in the territory east of the Rocky Mountains, in transportation, in certain branches of the foundry trade, in the building trades of some of the most important cities, and even in the clothing trade of such cities as New York and Boston. While collective bargaining is the ideal of most labor organizations, it is repudiated by such revolutionary organizations as the Syndicalists of France and southern Europe and the I. W. W. in America. No binding agreements with employers are admitted by these organizations.

The machinery of collective bargaining consists in a periodical meeting of the representatives of labor and capital to determine the rate of wages and other conditions of employment for a specific period of time, varying from one

year to three years and in exceptional instances even longer periods. The two parties are given equal voting power in the conference, and arrive at an agreement usually only after prolonged discussion of points at issue. If an agreement cannot be reached, arbitration by an impartial outsider may be resorted to. It is of course impossible to determine all conditions in minute detail, accordingly occasion for dispute is sure to arise during the term of the general agreement. The better-organized systems of collective bargaining provide for a continuing board or commission, with representatives of both parties to settle such disputes as they arise.

Voluntary arbitration of labor disputes has proved most effective where it is a regular part of a scheme of collective bargaining. The principle of arbitration is, however, often invoked, especially after a prolonged struggle, in cases where collective bargaining cannot be said to exist. The pressure of public opinion often forces resort to arbitration while the disputants are still far from exhaustion, and public authority concerns itself in increasing measure with the promotion of arbitration of labor disputes, in some cases making such arbitration compulsory.

The earliest systematic arbitration of industrial disputes appears in France. Before the French Revolution there was a tribunal at Lyons for the settlement of disagreements arising in the silk trade. This tribunal was connected with the guild, and disappeared with the abolition of corporations (1791). It had worked so successfully that it was restored in 1806, forming the germ of the conseils des prud'hommes (boards of experts) which still perform this function in France and Belgium. The example of Lyons was soon followed by several cities in southern France, and with excellent success. These early boards contained no representative of the working classes, the one at Lyons being composed of five merchants and four overseers. By a law of 1809 workmen were admitted, but they were always in the minority until 1848, when they were given, for a short time, equal representation. At the present day the conseils des prud'hommes are found in all of the important cities of France. They are composed of a board of conciliation, consisting of a representative of the workmen and a representative of the employers, which has jurisdiction in disputes involving less than 200 francs, and a board of arbitration consisting of three employers and three workmen, whose findings are subject to appeal to the Tribunal of Commerce in cases involving more than 200 francs. The court of arbitration has power to summon witnesses and to take testimony under oath. Acceptance of the decision is voluntary. Nevertheless, two-thirds of the cases brought before the court are settled by the board of conciliation, only a small percentage are appealed to the Tribunal of Commerce. It is, however, only minor matters that are brought before the courts. They have proved unable to prevent strikes and lockouts, which in late years have seriously crippled French industry. In Prussia industrial courts were established in 1849, but did not prove to be of much use, and were later abolished. In 1890 an Imperial law authorized the municipalities to create such courts. The president is appointed by the commune; the assessors must be workmen and employers in equal numbers. They have power to summon witnesses and to take testimony; in cases involving 100 marks or

more, appeal to the regular courts is permitted. Few municipalities have availed themselves of the privilege. Moreover, unofficial arbitration has made little headway in the Empire. In Switzerland far greater progress has been made in this direction. Unofficial arbitration is carried on under the direction of trade unions, and several of the cantons have established conseils des prud'hommes, after the French model. Arbitration is compulsory in some of the cantons, notably Lucerne, where refusal to accept an award may be punished by fines and imprisonment; in some cantons it is optional, as in France.

In England voluntary and unofficial arbitration was instituted early in the nineteenth century, and has made greater progress than in any other country. In 1836 it was in the pottery trade were settled in this way, and within the following decades several important trades adopted the same practice. Committees of employers and employed meet informally to discuss grievances, and usually succeed in reaching an amicable agreement; and where these committees are best organized, as in the coal trade of Durham, the decisions of the committee are rarely rejected by the disputants. In the last decade of the century, upon the initiative of the London Chamber of Commerce and the trade unions, local boards not connected with any particular trade were created in large numbers, and were successful in diminishing the number of serious disturbances in industry. But in England, as in France, the more important disagreements have had to be adjusted by protracted and costly strikes and lockouts.

New Zealand by a law of 1894, and West Australia and New South Wales by later enactments, undertake systematically to prevent strikes and lockouts by compulsory arbitration. The New Zealand law created boards of conciliation and a court of arbitration, the latter having power to enforce its awards by penalties. The boards of conciliation consist of four to six members, one-half representing the labor associations, the other half representing associations of employers. They are elected every three years by the associations of employers and employed. Each board elects as chairman an impartial outsider, who votes in case of a tie. The arbitration court is composed of three members appointed by the Governor, one from a list nominated by the employers, a second from nominees of the laborers, and the third from the judges of the Supreme Court. Cases are tried before the court only upon the request of one of the disputants, and all means of conciliation are attempted before resort is had to arbitration. Strikes and lockouts are forbidden while the case is pending. Awards of the court may be extended to a whole district. Under the act trade unions are recognized as corporate bodies; and only by belonging to such a body does a workman secure standing in the court. Numerous disputes have been settled by the court, and light fines have hitherto been sufficient to enforce its awards.

The first noteworthy case of unofficial arbitration in the United States was in 1865, when a committee was appointed to arbitrate differences between the Sons of Vulcan and their employers. Since that date arbitration committees have been chosen in many trades, often operating with marked success. Much attention has been attracted by the signal success of an unofficial

board which operates in the coal-mining industry of Illinois. The activity of this board dates from 1898, and since that year innumerable grievances which might have led to strikes have been amicably adjusted. When such disputes arise representatives of the coal operators and of the United Mine Workers (q.v.) meet, together with the miners and operators immediately interested. The mere discussion of the points at issue frequently results in explaining away alleged grievances.

Official boards of arbitration were established in Massachusetts and New York in 1886. At present 29 States in the Union have made statutory or constitutional provision for industrial arbitration or conciliation. In addition to the State courts, temporary tribunals were created by Federal statute in 1888 to settle grievances between railroads engaged in interstate commerce and their employees. These tribunals consisted of one member chosen by each party and a third chosen by these two. The law was repealed in 1898, but a law was enacted in the same year with similar features. As amended in 1913 this law constitutes a board of mediation and conciliation consisting of a commissioner and two other government officials named by the President. This board may offer its services, or, upon the request of either disputant, act in a purely mediatory capacity. If an agreement is not effected, it seeks to induce the parties to accept arbitration by a board consisting of either three or six members, as the disputants prefer. These arbitrators are chosen in the same manner as the members of the temporary tribunal just described, except that in case of failure to agree upon representatives of the public, these are chosen by the board of mediation. The findings of the board of arbitration are binding, but either party may appeal to the Circuit Court of Appeals. An extremely successful plan of arbitration of disputes in mining and transportation and other public-service industries was inaugurated in Canada in 1907 under the Industrial Disputes Investigating Act, recommended by the Deputy Minister of Labor, Mr. W. L. MacKenzie King. Under severe penalties strikes and lockouts in the industries covered by the act are prohibited until an investigation of the dispute has been made by an official board created for each particular case. Each party is called on by the Minister of Labor to name a member of the board, and the two thus named appoint a third. It is the duty of this board to bring about an agreement if possible, but if the parties fail to agree, after publication of the findings of the board a strike or lockout is permitted. Nearly 90 per cent of the disputes submitted to such boards have been settled.

An examination of the workings of boards of voluntary arbitration shows that for the settlement of disputes which are due to misunderstandings, or which involve matters of minor importance, their usefulness is unquestioned. Wherever they have been judiciously conducted they have served to lessen friction between employer and employed, and have often averted strikes and lockouts. But there are certain questions of general policy which have defied settlement by voluntary arbitration. Such, e.g., are the recognition of labor organizations by the employer, exclusion of nonunion labor from employment, a general and material increase or lowering of wages. These questions are still

usually determined by the strength and endurance of the contending parties. Investigations by impartial boards of arbitration may direct public sentiment, and so may bring pressure to bear upon the party whose ethical position is the weaker. But this pressure has not proved sufficient to prevent prolonged strikes, causing widespread distress to the public as well as to the parties to the struggle. It is for this reason that a growing sentiment manifests itself in favor of compulsory arbitration. It is pointed out that under a system of industrial concentration a strike may wholly cut off the supply of one of the necessities of life—a condition which is manifestly intolerable. Advocates of compulsory arbitration point to the example of New Zealand, where for a number of years disputes have been adjudicated without cessation of industry. Opponents of compulsory arbitration are, however, no less decided in their views than are the advocates of it. It is pointed out that laborers will frequently demand terms to which employers can accede only by producing at a loss; and that courts of arbitration, under the influence of a public sentiment naturally favorable to the laborer, will often give awards which will discourage business enterprise. It is alleged that this is the case in New Zealand, although this is vehemently denied, and there is no evidence that capital is withdrawing from the Dominion. Moreover, it would obviously be difficult to force the laborers to abide by a decision unfavorable to them, since men cannot be compelled to continue to work against their will. The incorporation of laborers into associations with collective responsibility (see TRADE UNIONS) is advocated as a measure which will obviate this difficulty; but such a measure is strongly opposed by the better organized labor unions, as well as by those who view with suspicion any tendency away from individual freedom and responsibility. In spite of the difficulties which beset compulsory arbitration, however, it would appear to be obvious that social welfare demands that judicial means should be developed for settling peacefully those disputes which can now be settled only through strikes involving untold losses and suffering.

In recent years much stress has been laid upon the similarity between compulsory arbitration, as it operates in New Zealand, and the principle of judicially determined wages or minimum-wage laws in other Australasian states. Compulsory arbitration, and arbitration, voluntary or compulsory, imply the existence of unions. Such organizations, however, have not succeeded in commanding more than a minor part of the labor field. The laborers subject to the worst forms of exploitation cannot form effective organizations. For these relief is to be had, apparently, only through minimum-wage laws (q.v.). The final phase in the relations of labor and capital under the industrial system thus appears to be one in which the fundamental conditions of employment are determined by the state. See MINIMUM WAGE.

BIBLIOGRAPHY. Jeans, *Conciliation and Arbitration in Labor Disputes* (London, 1894); Brumel, *De la conciliation en matière commerciale* (Paris, 1898); Lloyd, *A Country Without Strikes* (New York, 1900); *Report of Industrial Commission*, vol. xvii (Washington, 1901); *Employers and Employees* (Chicago, 1903); Gilman, *Methods of Industrial Peace* (Boston, 1904); Hatch, *Government Industrial Arbitra-*

tion, *Bulletin of United States Bureau of Labor* No. 60 (Washington, 1905); Fromont de Bouaille, *Conciliation et arbitrage* (Paris, 1905); Adams and Sumner, *Labor Problems* (New York, 1905); Knoop, *Industrial Conciliation and Arbitration* (London, 1905); Pigou, *Principles and Method of Industrial Peace* (ib., 1905); MacKenzie King, *Canadian Method of Preventing Strikes and Lockouts* (New York, 1912); *Mediation and Arbitration Laws of the United States* (Washington, 1913); Sufferin, *Conciliation and Arbitration in the Coal Industry of America* (Boston, 1915).

LABORATORY. A laboratory is literally a place of labor, a workshop, and the term is still frequently employed in this meaning in connection with the manufacturing of chemicals, drugs, explosives, etc. The word is ordinarily used, however, to designate a room or building equipped with means for conducting experimental investigations in some department of science or art. Research laboratories of chemistry, physics, engineering, biology, etc., are maintained in all the better colleges and universities, in the interest of pure and applied science, and in many hospitals, manufacturing establishments, etc., for the purpose of devising new methods of procedure and conducting tests of various kinds. In addition to these laboratories devoted to research, there are numberless laboratories connected with public and private schools, academies, and colleges, whose function is not the discovery of new truths, but rather the demonstration of facts already well established. Every high school, e.g., possesses a chemical laboratory in which experiments are performed by students, who are led in this way to a first-hand, and therefore better, knowledge of the facts and principles of this science.

The history of research laboratories can be best understood in the light of the development of all scientific thinking. There is at first a period of crude observation of the facts under the complicated conditions of practical life. Such observations have given to science many valuable facts, but serious errors have crept in at the same time. This is naturally followed by a period of reaction against observation, and in its stead there is an attempt to deduce all knowledge from already given general laws. This is the period of authority and the syllogism. The reaction to this method leads to the third and final stage of science, when the laws and facts of nature are determined by means of observation of phenomena, but now under control and known conditions. The sciences have not advanced with equal speed, so that while some are well along in the third stage of progress and are still growing rapidly through experimental research, other sciences are in the second stage, while a few still remain in the first stage. Laboratories of some sort have existed since the earliest times. The Chinese and Egyptians, as well as the Greeks and Romans, certainly possessed them; but they were in all probability similar to the better known laboratories of the physicians, apothecaries, alchemists, and astrologers of the Middle Ages, given over largely to the search for the philosophers' stone and to the manufacture of elixirs, drugs, charms, cosmetics, etc. With the fifteenth century came the reaction against Scholasticism, and men began to study nature rather than books; they began to observe rather than to deduce facts and principles, and by the end of

the sixteenth century the experimental method was well established.

In 1589 Galileo demonstrated the necessity of the experimental method at Pisa. Climbing the leaning tower, he let fall a weight of one pound and a weight of 100 pounds; starting simultaneously, the weights struck the ground together, at once and forever disproving the Aristotelian deduction that the speed of falling bodies was proportional to their weights. Francis Bacon, in 1620, and Comenius, in 1630, set forth arguments for the inductive method and the experimental investigation of facts. But prior to the nineteenth century all laboratories were private institutions devoted wholly to research. In 1824 Purkinje established a physiological laboratory in Breslau, in 1825 Liebig established a laboratory of chemistry, medicine, and physiology in Giessen; in 1845 Lord Kelvin—then William Thomson—opened a physical laboratory in the University of Glasgow; in 1849 a pharmacological laboratory was created by Buchheim; in 1856 Virchow opened a pathological laboratory in Berlin. As the work of the laboratories has developed, there has come about a specialization of the problems to be undertaken, and as a result new research laboratories are founded every year.

Laboratories for instruction do not differ materially from research laboratories as far as equipment and method is concerned.

Chemical Laboratories. The appearance of the earliest chemical laboratories is familiar, since they formed attractive subjects for the contemporary artists. Not merely were these laboratories used for experiment, but also for the teaching of pupils and assistants. At present any well-lit room, supplied with water, gas, electricity, and a hood communicating with a flue to carry off noxious gases, may serve for almost all chemical work. The water supply operates vacuum pumps and can be made to furnish air under pressure by means of a trompe; power can be obtained either from small water or electric motors, and the gas furnishes heat. Much chemical work, both scientific and technical, is carried out in such laboratories, originally built for other purposes. The most important chemical laboratories, however, are buildings, constructed entirely for chemical work, in connection with the great universities and schools of science and are intended both for investigation on the part of the instructors and advanced students and for the regular instruction of the mass of the students. The wide extension of this class of laboratories began with the famous laboratory erected by Liebig at Giessen in 1825, after which teaching laboratories, each showing an advance on the preceding, sprang up at almost all the German universities and quickly reached a high degree of excellence.

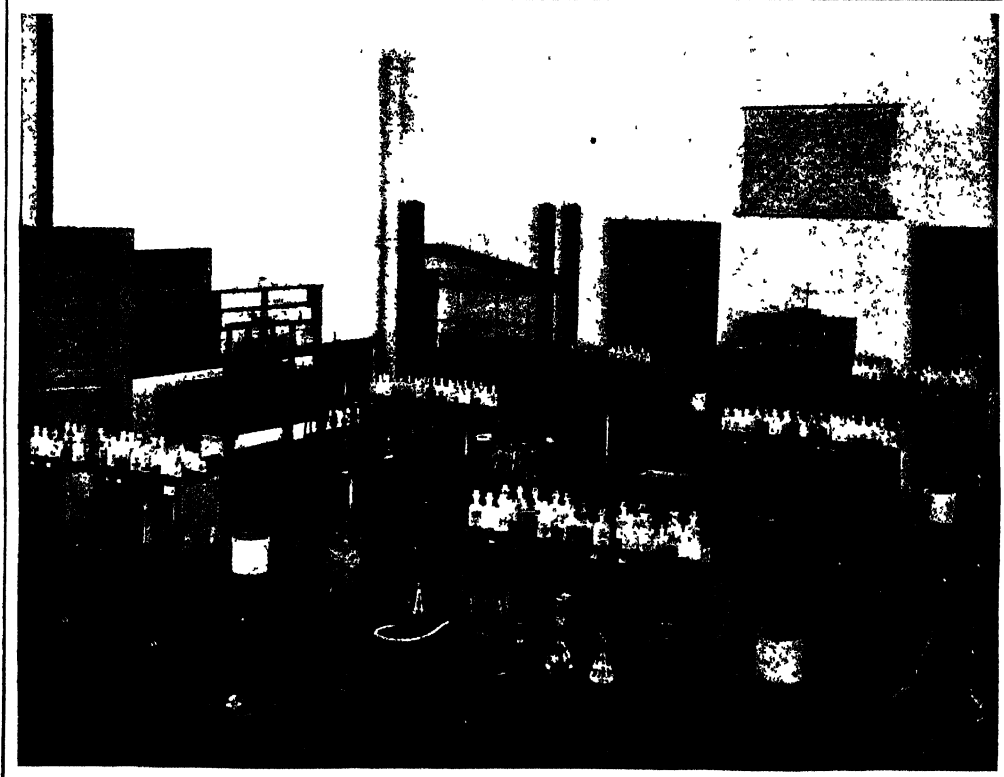
The laboratory buildings are divided into rooms of varying sizes, each room assigned to one or more branches of chemical science, so that each student passes, during his course, through most of the rooms. In France a less systematic arrangement, avoiding large rooms, is preferred by some chemists. The number of the rooms and the branch of chemistry to which each is dedicated vary with the size of the building and the importance assigned to different subjects and to teaching and investigation respectively. Many laboratories consist of a large lecture room; a large room for simple

inorganic preparations and qualitative analysis; another large room for quantitative analysis and inorganic research; a third large room for organic chemistry; and a number of small rooms to serve as classrooms, library, balance rooms, private laboratories and offices for the instructors, for gas and water analysis, for physical chemistry, as furnace room, combustion room, hydrogen-sulphide room, storerooms, toilet rooms, etc. In some cases separate buildings are provided for particular branches of chemistry.

In the larger laboratories almost every branch of chemistry has its separate room. Few general principles can be laid down for the plan of the building and the relation of the rooms to each other. The first consideration is to obtain abundant light. Everything should give way to this. Next, the office and private laboratory of each professor should be central with reference to the rooms under his care. However, when permanent and responsible assistants are in immediate charge of the large rooms, this consideration is of less importance. Of course such rooms as balance rooms, combustion rooms, and hydrogen-sulphide rooms must be close to the large rooms to which they belong. Special considerations will decide the position of various rooms. Thus, a furnace room is placed on the lowest floor, to get the advantage of a high chimney. All chemical laboratories are elaborately piped. There is usually one system for gas used in heating, another for gas used in lighting, and often a third for certain specially protected gas jets, which are required to burn continuously for long periods. This permits the rest of the gas to be turned off every evening at the close of work. Water is carried, not merely to each room, but commonly to each desk. Where the water is supplied under a strong pressure, injector vacuum pumps are used; but when this is not the case, the whole building must be supplied with pipes connected with a vacuum steam pump. In any case such a pump, with connecting pipes to each desk, is almost a necessity in the organic laboratory for distilling under reduced pressure. Another steam pump supplies a series of pipes, carrying air under pressure. There are steam or hot-water pipes for heating and pipes for steam at high pressure for heating stills, water baths, and steam closets. In addition, in some laboratories distilled water is distributed to the different rooms by a system of block-tin pipes. Formerly oxygen was distributed to several points by pipes, but the introduction into commerce of compressed oxygen in strong steel cylinders has made this system obsolete. Hydrogen-sulphide gas is also carried, in most cases, by pipes to several rooms. The system of pipes for carrying off waste water must be carefully planned. Ordinary plumbing is destroyed in a few years by acids and compounds of mercury. An excellent plan is to carry the waste water by open troughs to the vertical earthenware main pipes, so avoiding leadwork altogether. The system of flues for ventilation of the hoods must be carried over the whole building. This system may be connected with a lofty chimney or with a rotary fan. Electricity is usually supplied, for scientific purposes, from accumulator batteries.

Each student working in a room has a locked desk for his own use. The desks are usually supplied with gas, water, vacuum pumps, draft closets, apparatus, and reagents, so as to reduce to a minimum the cases in which it is necessary

LABORATORY



1 A LABORATORY OF ELECTRICAL ENGINEERING 2. A CHEMICAL LABORATORY FOR QUALITATIVE ANALYSIS

for the student to leave his desk. Space is economized in most laboratories, in the rooms set apart for beginners, by dividing the space under each desk into two independent closets, so that two students may use the same desk at different hours or on different days. In the larger laboratories much special apparatus is found, such as a machine for producing liquid air, grinding mills driven by power, working models of chemical industrial works, and apparatus for treating materials on an industrial scale.

With the growth of scientific methods in various fields there have been many special chemical laboratories, as those for pure-food determinations, water analyses, etc., maintained by official bureaus. These are usually well-arranged chemical laboratories with equipment adapted to the work in hand.

The technical laboratories maintained by industrial establishments may be simply for analytical work, in which case they may be modeled after the rooms for quantitative analysis in the teaching laboratories; but in cases where experimental work is carried on, the plan is quite different. Power must be supplied more freely, facilities provided for handling larger quantities of material, and liberal space left free to set up working models of apparatus on a large scale. See section on *Engineering Laboratories*.

Laboratories of chemical research are arranged either on the principle of each room being adapted to some special operation—there being a distillation room, a constant-temperature room, etc.—or on the principle of individual rooms, each worker having a room to himself, in which he may carry on practically all of his work. The two principles are often combined, and some such combination is likely to produce a reasonably near approach to an ideal research laboratory.

Physical Laboratories. Rooms specially equipped for physical experimentation were not provided until long after well-organized chemical laboratories were in use. Such early experimenters as Boyle, Newton, and Franklin made use of their own living apartments for their experiments, and it was not until well into the nineteenth century that professors of physics obtained separate rooms in which they could carry on work with due convenience. The next step was for these professors to admit students to their own laboratories and to direct their research. At Heidelberg the first physical laboratory was opened in 1846, two rooms being devoted to instruction in practical physics. The laboratory at the University of Glasgow, where original research was carried on by students under the direction of Lord Kelvin, was also one of the earliest of these laboratories. In France, in spite of the brilliant work done in private laboratories in the first half of the nineteenth century, the facilities for systematic work by students were hardly as ample as in Germany, but by 1868 it was realized that additional accommodations for students and research laboratories for professors and skilled investigators were essential. One result of this movement was the foundation, in the Sorbonne in Paris, of a physical laboratory, of which Jamin was made director, and which has been celebrated not only for his researches, but also for those of Lippmann. This laboratory was placed under the direction of the faculty of science in 1894 and was then remodeled. King's College, London,

also adopted regular laboratory training as part of its work in physics about this time, and three rooms in its building were used as a laboratory. The first building in England specially designed for the study of experimental physics was constructed at Oxford, under plans of Prof. Robert B. Clifton. This was followed by the Cavendish Laboratory at Cambridge, built in 1874 by Prof. James Clerk-Maxwell, who incorporated in it many of Professor Clifton's ideas. In the United States the progress was naturally slower than in Europe; but it is asserted that the first institution to make laboratory physics a part of its regular educational work was the Massachusetts Institute of Technology, in Boston. The systematic work begun at the Massachusetts Institute of Technology in practical physics furnished an example which was soon followed by other American colleges, including Cornell and Harvard, and even by many high schools, and so rapid was the progress made that in 1886 Harvard required experimental work in physics in its entrance examinations.

In elementary laboratory work in physics the apparatus is simple, and the results demanded are qualitative rather than quantitative. A laboratory for this purpose would be merely one or more rooms provided with suitable tables. The simple apparatus used should, where possible, be constructed by the student himself, the use of tools for the making, adjusting, and repair of apparatus forming not the least valuable part of the training. The ordinary manipulation of glass tubes, and the use of the more common woodworking tools, as well as of a few implements for cutting and shaping metal, must be learned by the student at an early stage.

The entrance requirements for the colleges have set the standard for the physical work to be done in preparatory schools. No elaborate instruments are required for such courses, and it is considered better practice to have the student work as accurately as possible with somewhat crude apparatus. In the college laboratory the equipment is of a much higher grade and should be as extensive as the means of the institution will permit. The student here begins to work quantitatively, and accuracy of observation and measurement is the prime essential of his work. The usual method of instruction is to have an elementary course which covers the essential features of physics. That is, a student will begin with the ordinary measurements of length, mass, and time. He will perform quantitative experiments in sound, heat, light, and electricity. There must be at his disposal measures of length and micrometers of various forms which will enable him to determine length or thickness to one-hundredth of a millimeter, or even less. He will also have analytical balances for determining the mass of substances with an accuracy of the one-hundredth of a milligram, and such other instruments as accurately calibrated thermometers, standards of electrical resistance carefully determined, and optical apparatus in which the graduated circles and other parts used for measurement are of high precision. As the construction of this apparatus involves considerable mechanical skill, it is, of course, impossible for the student to make it; but its test and calibration is one of his first tasks. He is taught the necessity of correcting his observations and looking for and compensating for such causes of error as can be detected

and, in short, to attain as great accuracy as the apparatus he uses is capable of.

For elementary laboratories no extensive and peculiar structural features are required in the building. Suitable brackets firmly fastened to brick walls furnish supports for the more sensitive apparatus, and convenient sinks and water and gas piping and electric fittings are provided. In most colleges and universities, however, these elementary laboratories are in the same building as research laboratories for the staff and advanced students, and, as a result, they contain many features not absolutely essential for work of this description. In building physical laboratories for research work every other consideration is, or should be, sacrificed to direct utility. Stone piers on which such instruments as galvanometers are set are independently founded and carried up through one or more floors, without any connection whatsoever with other parts of the building. Stone tables or slabs for similar purposes are built in the brick structural walls of the building. High towers for experiments with pendulums, pressures of liquids, and falling bodies are another feature of a modern laboratory, and in most cases they, too, are built on an independent foundation. The building is usually arranged so that it has the best possible light, especially as regards direct sunlight. For certain work electrical or other power is desirable, and a system of pipes, wiring, and shafting is carried about the building. Another feature is a constant-temperature room in the cellar, usually where the astronomical clocks and other instruments which must be maintained at or near the same temperature the year around are installed. Some provision on the roof or elsewhere should be made for the aerial wires used in radiotelegraphy. In short, the greatest care is observed in adapting the building for its use as a place of research, and every convenience is placed at the disposal of the student. It must be stated, however, that many physicists do not altogether approve of such refinements of laboratory construction and think that the ability to overcome difficulties is a valuable part of the training. Furthermore, the very nature of the work may in some cases constitute serious causes of error. For example, an independent tower or pier may act as an inverted pendulum and have a period of vibration of its own. But be this as it may, it is undoubtedly true that at the universities where the greatest facilities have been introduced into the buildings and are put at the disposal of the students, the best work is carried on. The laboratory belonging to the University of London and that of the University of Bonn are typical of the best progress in modern laboratory construction, although Berlin and a number of other German universities are not far behind.

But important physical research has also been carried on in laboratories outside of educational institutions, and the more celebrated of these deserve brief mention. The laboratory of the Royal Institution in London was founded in 1800 by Count Rumford, and, although the original intention of its founder was the furtherance of applied science, it soon became the home of the most brilliant and original investigations in the realm of pure science, carried on by such men as Sir Humphry Davy, Faraday, Tyndall, Rayleigh, and Dewar. In 1896 the research facilities of the Royal Institution were increased

by the opening of the Davy-Faraday Research Laboratory, which has been most successfully conducted by Lord Rayleigh and Sir James Dewar. In Germany important work has been carried on at the Reichsanstalt, or physicochemical institution, at Charlottenburg, near Berlin. Through the munificence of Werner Siemens, who in 1884 gave about \$125,000 to the institution, and through appropriations by the Reichstag, suitable buildings were erected. From 1888 to 1894 the laboratory was directed by Helmholtz, and this famous scientist was succeeded by F. Kohlrausch. The influence of the Reichsanstalt on industrial conditions in Germany has been most valuable. Various standards are here made, instruments are calibrated, and certificates which have a world-wide acceptance are given to the apparatus which complies with the standards of the bureau. Technical research is also carried on, and many valuable papers are published from time to time from the bureau. Various instruments of glass are examined, and the work of the Germans in this field has been raised to a high degree of excellence, with the result that the manufacture of optical instruments has greatly increased. The same holds true in the case of electrical apparatus, and the standards of resistance and other apparatus also have been made of a high grade of precision. This laboratory, as are those of France, Great Britain, and the United States, is also active in securing international standards, especially in the field of electricity, through co-operative action. In Paris there is the Conservatoire des Arts et Métiers. With the purchase of a physical cabinet, a department of physics was organized in 1829, which has since been increased and developed, and furnished a home for important researches. Perhaps the most celebrated laboratory in France is the International Bureau of Weights and Measures, organized in 1875 by the coöperation of 18 different nations. Here are prepared for distribution to the subscribing nations the various metric standards of length and mass, the meter and kilogram of the archives with which the secondary or national standards of the various nations have been compared are preserved. In this laboratory are carried on the most elaborate comparisons of standards and instruments, and the work of this bureau has been invaluable to workers in science in many departments. The National Physical Laboratory was established in Great Britain during the closing years of the nineteenth century, and to it in 1900 were given a building and site at Bushy House, near London, its control being given to the Royal Society. The work thus started rapidly spread, and in 1914 there were, in addition to the original building used for administration and separate laboratories, buildings for metallurgy, alloy testing, electrotechnics, optics, etc. In the United States in 1901, the National Bureau of Standards was established by Act of Congress, approved March 3, 1901; it is designed to possess a similar function to the Reichsanstalt and the National Physical Laboratory of England, and its scope and work are constantly broadening. By law the Bureau of Standards is given the custody of the national standards and will issue or certify secondary standards for the use of industrial and scientific workers. At the present time the bureau is doing a great deal of excellent testing work; but it is as a research institution that it is

most conspicuous and is doing work of the greatest value to the country. See STANDARDS, UNITED STATES NATIONAL BUREAU OF.

In connection with government physical laboratories, these institutions usually serve as depositories for the national standards of weight and mass, as well as of electricity, illumination, etc. Much of the work consists in the construction of secondary standards, or passing upon their accuracy, and issuing the necessary certifications, as well as providing or certifying measures and instruments for insuring accurate supervision by the state or local government and for providing high accuracy in commercial and other undertakings. Some of the various investigations, such as radium tests, can only be carried on at a laboratory with an elaborate equipment and ample resources, so that such work is properly a task of a central national organization. Also such institutions publish collected papers of research, carried on by members of their staff and other workers in their various departments, and thus form a means of diffusing knowledge in special fields.

Aërodynamical Laboratories. In practical aeronautics and the development of the aeroplane much valuable work has been accomplished in the laboratories maintained for this special purpose, e.g., that of Eiffel in Paris and similar institutions in Europe and the more recently established Langley Aërodynamical Laboratory of the Smithsonian Institution at Washington are extremely productive. These are discussed in the section on *Aeronautical Institutes* in the article AERONAUTICS.

Engineering Laboratories. The success which has attended chemical, physical, and other laboratories organized either for instruction or research has led to the establishment of engineering laboratories as departments of the State universities of the United States or of the engineering and technical schools of Europe and America. In these the student is taught to apply himself particularly to such problems as he would encounter in the actual practice of his profession. Such laboratories are also used by advanced workers to study experimentally such problems and processes as are encountered in daily life, with the hope of finding simpler and more economical methods. Accordingly there are laboratories for mechanical engineering, hydraulic engineering, mining engineering, electrical engineering, and chemical engineering, in which are installed machinery and apparatus similar to that found in actual practice. Such laboratories have been found essential for the best professional and technical education and are a distinct feature of well-equipped technical schools and universities in Europe and America. A laboratory contains machinery for studying different forms of motors and power transmission and for determining their most economical operation. This would include the ascertaining of friction losses, the study of various kinds of lubricants, etc. In order to carry on this work as successfully as possible, machinery of such size as will be found in a small plant is necessary, and the students are taught its actual operation and maintenance. In some schools there may be an independent steam-engineering laboratory, while in others it may be a part of the laboratory of mechanical engineering. Here the students are taught to use steam engines of different types under varying conditions of service. In the important

schools of mines are usually found the various machines used in mining and the preparation and reduction of ore. Locomotive engineering is now taught in the laboratory, and at least two universities in the United States, as well as several manufacturing works, are supplied with testing locomotives in which fuel friction, draft, and other tests can be made on a large scale. Electrical-engineering laboratories were among the first to be carried out on an extensive scale, as in the laboratory method of instruction machinery of more than model size was early found necessary for the student. In the best electrical-engineering laboratories are to be found motors and dynamos for direct and alternating current, transformers, storage batteries, etc.; and the various problems involved in the generation of the electrical power and its transmission are studied under conditions approaching actual practice as nearly as possible. In chemical laboratories the growth of large manufacturing establishments has led to a demand for practical chemists, and it is now considered that these can best be trained by having them as students carry out preparations on a considerable scale by using actual machinery. In the most modern of laboratories for the study of applied chemistry, such processes as dyeing, the manufacture of sugar, the manufacture of gas and sulphuric acid, electrolytic methods of preparing chemical substances, distillation, etc., are all carried on on a practical scale.

In engineering laboratories the practice will vary widely in different institutions and with different instructors, depending on adequacy of equipment and number of students. The machinery and apparatus at the disposal of the students and instructors will often influence the work done and will cause students desiring to follow a particular branch to select an institution where such facilities are the best. Engineering laboratories usually follow adequate manual training and work in chemical and physical laboratories, and the best results are secured when the work is properly coördinated. They have a distinct bearing on technical education and have played a large part in the industrial development of the United States.

Industrial Laboratories. Recently, in the United States, as has hitherto been the case in Germany, an increased amount of stress has been laid on industrial or commercial laboratory work and investigation. In large industrial and manufacturing corporations not only are large laboratories maintained for testing and for the controlling of processes of manufacture, but also for research, so as to secure improvements in method and to devise the new products. Accordingly many large corporations maintain research departments, where a scientific staff engages on work aside from the daily routine; and this is seen most preëminently in the chemical and electrical industries, though the former in the United States are still behind those of Germany in this respect. In these laboratories experimental work on a larger scale than in purely scientific institutions often is possible, and many valuable results are secured. In some cases an association or group of manufacturers may unite to maintain a laboratory to determine standards and to standardize processes, material, or carry on other investigations of common interest. These laboratories also may be organized for research in addition to the ordinary commercial tests. Such a laboratory

in the United States is that of the National Electric Light Association, maintained at Cleveland; while, as an example of a large commercial testing laboratory dealing with a wide range of products, might be cited the Underwriters' Laboratories under the auspices of the National Board of Fire Underwriters of the United States maintained at Chicago, Ill.

One of the best examples of an industrial-research laboratory in the United States is that maintained by the General Electric Company at Schenectady, in connection with its large plant. Here the most elaborate and extensive investigations can be carried on, involving all the refinements of pure science, with ultimate applicability to practical utility. For example, the increase in the efficiency of the incandescent electric lamp has been brought about largely through the work of the investigators in this laboratory, and gradually this has been increased, and new lamps of greater economy have been developed, which have revolutionized both indoor and outdoor illumination. Tungsten drawn wire, e.g., was first made at the General Electric Company's laboratory, and various other substances applicable for incandescent filaments have been submitted to searching investigation. The pressure within the lamps and within the vacuum tubes has also been studied, and a result of special work has been the Coolidge X-ray tube, which has contributed so much to Roentgenography. Over 50,000 square feet of space was provided for new laboratories on the occasion of the construction of a recent building, and the work since organization has constantly developed both in scope and value.

Biological Laboratories. An enormous impulse was given to the purely scientific advancement of biological science by the early foundation of laboratories for research in connection with the chief German universities in the third quarter of the last century. In the United States the first zoological laboratory, or, indeed, any in general biology in America, was established by Louis Agassiz at Harvard University, at the middle of the nineteenth century, when Wyman also taught to special students comparative anatomy. Agassiz gathered about him and trained specialists in zoology, most of whom became teachers and perpetuated his methods of instruction. In Europe, Johannes Müller established a laboratory at Berlin (1857-58) and trained many students, who afterward filled chairs in different universities. The impetus he gave to comparative anatomy, physiology, and embryology through his laboratory methods was deep and lasting. He was, perhaps, the father of modern morphological investigations and of laboratory methods. Other zoologists who exerted an influence which was felt by a later generation and led the way to the establishment of marine biological laboratories were the Norwegian naturalist Sars (1805-69), who carried on deep-sea dredgings and embryological researches on the coast of Norway; Rathke, of Dorpat; and Forbes, of Great Britain. During this period H. Milne-Edwards and De Quatrefages worked in temporary private laboratories on the French coast and in the Mediterranean.

The third quarter of the nineteenth century was a period of the installation of biological laboratories in connection with the leading universities, especially in Germany. The work-rooms were fairly large and well lighted, but the furniture was simple—tables, dissecting

implements, microscopes, aquaria, and in the basement perhaps a vivarium for mammals, forming the greater part of the furniture. Such a laboratory was that of R. Leuckart at Leipzig, who trained a large number of German, Swiss, American, English, and Dutch zoologists and morphologists. With the rise of more modern modes of investigation in comparative embryology and morphology, involving methods of cutting their sections for the microscope, of staining and mounting them, the use of various reagents and preservative fluids, the equipment of biological laboratories became more and more elaborate and costly.

Our modern *bacteriological laboratories* took their rise from the researches of Pasteur in France (1866-90). His studies led finally to the establishment of the great Pasteur Institute in Paris, which was followed by the installation of bacteriological laboratories in Germany, Italy, and other European countries, as well as in the United States and Canada—institutes either directly connected with universities and medical schools, or independent. In such laboratories as these, and other temporary laboratories established in Italy, west Africa, India, and Cuba, have been worked out the causes and preventives of the filth diseases, of yellow fever, and tuberculosis.

Marine laboratories have exerted a profound influence on biological science, besides training science teachers and aiding investigators. Müller in Germany spent his summers by the seaside studying the anatomy, and especially the development, of the lower animals, and so in France and on the shores of the Mediterranean did H. Milne-Edwards and De Quatrefages, and Gosse on the English coast. We owe, however, to Louis Agassiz the idea of the foundation of the modern seaside or marine laboratory, which has resulted in the establishment of the great zoological station at Naples, those of France and other countries. Agassiz and his students had for many years dredged and collected along the coast of New England and had spent several winters at Charleston, S. C., to study the marine fauna. In 1873, aided financially by a generous friend of science, he founded the Anderson School of Natural History at Penikese, an island situated at the mouth of Buzzard's Bay. Though, owing to Agassiz's death, it flourished only two years, its work was most important in itself, and because it led to the formation of similar laboratories. It led to the foundation of the Chesapeake Zoological Laboratory of the Johns Hopkins University, under the direction of Prof. W. K. Brooks, which was succeeded by temporary laboratories at Beaufort, N. C., and the Bahamas; also to the summer school which was maintained at Annisquam for several years by the late Prof. A. Hyatt, to a summer school carried on by the Peabody Academy of Science at Salem, Mass., in 1876-81, and to others, such as the summer school held under the auspices of the Brooklyn Institute at Cold Spring Harbor, Long Island. This latter passed to the jurisdiction of the Carnegie Institution and under the direction of Dr. Davenport has produced most excellent work. The same institution also supports the Tortugas Laboratory with Dr. A. G. Meyer as the very able head. Other similar laboratories are the Hopkins Seaside Laboratory of the Leland Stanford Junior University in California; the Tufts College Laboratory at Harpswell, Me., under the direction of Prof. J.

S. Kingsley; and that at Beaufort, N. C., a department of the United States Fish Commission. Alexander Agassiz for many years maintained a well-appointed private laboratory at Newport, where a number of investigators worked through the summer months.

Led by Louis Agassiz's example, Dr. Anton Dohrn in 1872 began to build, and in the following year opened, a costly zoölogical station at Naples, where gather zoölogists of different countries, whose researches, carried on under the most favorable auspices, have had a manifest influence on systematic, and more especially embryological and morphological, studies. This is a permanent institution established in a handsome structure built for the purpose near the sea, with a director and staff of assistants, and open to investigators throughout the year. Tables are offered to investigators of different countries, the expenses or rent being paid in some cases by the British, American, and other associations, universities, and other institutions. The basement is occupied by a series of large, well-stocked aquaria and is open to the public. There are a large library, separate workrooms for investigators, steamers for dredging, collection, and preparation, while the institution issues several publications of importance to zoölogists.

This great establishment has been the parent or forerunner of similar laboratories. The late distinguished French zoölogist, Baron H. Lacaze-Duthiers, founded and built at his own expense two well-equipped seaside laboratories, one at Roscoff, in northwestern France, and the other on the Mediterranean, near the Spanish line, at Banyuls-sur-Mer. These have been utilized not only by French, Swiss, American, and English investigators, but by a large number of French students of the Sorbonne and the Collège de France. There is also a laboratory at Concarneau, under the auspices of the Collège de France, and still another at Arcachon, maintained by the University of Bordeaux. The city of Paris supports a Laboratoire d'Evolution des Etres Organisés, 3 Rue d'Ulm, directed by Prof. A. Giard, who has a private laboratory at Wimpey, near Calais. These were followed by the Plymouth Laboratory, on the English Channel, at which work a small number of investigators, while in the summer season classes from Oxford, Cambridge, and Eton study under an instructor, one of the officers in charge. Other smaller seaside laboratories have been established by Professor Herdman near Liverpool, at Millport, one at Port Erin, on the Isle of Man; one near Bristol, another near Aberdeen, on the North Sea coast; and one near Dublin, on the Irish coast. These are associated together and controlled by the Marine Biological Association of the United Kingdom and in part are supported by grants from the British Association, the Royal Society, etc. The Germans largely patronize the Naples station, but have a small one at Helgoland, while the university at Vienna sustains a well-appointed one at Trieste. The Russians have one at Sebastopol and also at Ville Franche, on the Mediterranean; the Dutch on the coast of Holland; the Danes on their coast; while the University of Tokyo maintains one on the Japanese coast.

Floating marine laboratories, as they may be called (i.e., those on shipboard), were established on the British exploring ship *Challenger* during her five years' voyage around the world, and

fully equipped laboratories have been furnished on the various exploring oceanic expeditions, including the five recently sent out to the Antarctic seas by the German, Swedish, English, and Dutch governments.

The laboratories in connection with the fisheries commissions of the United States, Germany, Norway, and Great Britain have been productive of excellent results, both scientific and practical. Early in the seventies of the nineteenth century Prof. S. F. Baird, the founder of the United States Commission of Fish and Fisheries and its first commissioner, was wont to establish at his summer headquarters, in different seasons, at various points along the coast of New England, from Woods Hole to Harpswell, Me., temporary laboratories, at which students were hospitably entertained. This led to the permanent establishment of two institutions at Woods Hole. The Woods Hole Laboratory has exerted much influence. To this school large numbers of investigators and college students have flocked, and it has been a most important means of training science teachers. The laboratory of the United States Fish Commission at Woods Hole is a permanent institution, open winter and summer to experts. It is well equipped and frequented by a large number of investigators and advanced students. Its official organs are the reports and bulletins of the United States Fisheries Commission, and the entire plant is probably the most elaborate and extensive in the world. A marine laboratory, at which much valuable research work has been done, was established in 1902 at Beaufort, N. C., by the United States Fish Commission. The Floating laboratory of the Rhode Island Commission of Inland Fisheries has carried on important work on the development and artificial culture of the clam and lobster, and the results have been published by the State.

Several summer laboratories for the study of aquatic life, insects, fishes, etc., as well as for educational purposes, have been established in the central United States. Of these, the first to be founded, and the one which has been the most productive of results advantageous to science, is that at Havana, Ill., founded by Prof. S. A. Forbes. It has published a bulletin and has from the first shown great activity. In Europe a well-known fresh-water laboratory has for several years been maintained by Prof. Dr. O. Zacharias at Plön in Germany.

All botanical laboratories equipped for elementary instruction are practically the same. It may be assumed that such establishments provide equipment for fundamental courses in morphology, physiology, ecology, and perhaps taxonomy. In provision for research work, however, botanical laboratories vary widely. There is probably no complete botanical laboratory in the world, in the sense that it provides for every phase of botanical investigation. Each prominent laboratory is strong in one, or perhaps a few, of the many phases of botanical research, and this is recognized by graduate students in selecting a laboratory for definite work. Since the chief opportunity of any botanical laboratory is the staff of men in charge of the work, every laboratory has developed about certain men rather than along theoretical lines. While worthy morphological and physiological laboratories can be developed in connection with any university that has money enough to employ suitable men and furnish them equipment,

worthy taxonomic equipment is a matter of historical development. It involves the accumulation of large collections, whose chief value lies in sets of plants that are not in the open market. For example, while there are possibly 10 botanical laboratories in the United States in which the opportunities for research in morphology, physiology, and ecology may be regarded from fair to excellent, there are only three, or at most four, points where great historical collections of plants have made valuable research work in taxonomy possible. See BOTANIC GARDEN.

Psychological Laboratories. The first institutional laboratories for the pursuit of researches in psychophysics and experimental psychology (q.v.) were founded by Wilhelm Wundt (University of Leipzig) in 1879 and by G. Stanley Hall (Johns Hopkins University) in 1883; a private laboratory was conducted by William James at Harvard in 1874-76. Laboratories are now the rule rather than the exception in colleges and universities of the United States and have been established also in practically all the German universities; they are found in the principal universities of the other European states, and they exist also in Canada, New Zealand, Japan, and South America. In general they are separately organized, under the title of psychology; but in some cases they are connected, more or less closely, with educational, psychiatric, and physiological foundations.

The recent development of psychology as a science, the multiplicity of problems that crowd upon the investigator, the varied training of the men who have devoted themselves to psychological experiment, and the makeshifts to which psychologists are forced by inadequate laboratory accommodation, render it exceedingly difficult to give any typical description of the arrangement and furnishing of the psychological laboratory. We may, however, say, without much fear of contradiction, that the "ideal" laboratory would present at least the following features. There should be (1) a large lecture room or auditorium, capable of seating some 300 hearers, with a good demonstration table and arrangements for lantern projection. Behind the lecture room, and opening into it, should be (2) a museum or storeroom, in which are displayed not only all the demonstration instruments required for a general lecture course, but also series of standard pieces illustrating the historical development of experimental method. (3) For work in optics there should be two dark rooms, adjoining and connected, and it would be well if the larger of the two, the anteroom, should have a window opening into the general lecture room. This anteroom is necessary for the demonstration of certain phenomena of contrast (q.v.), for work on visual adaptation, on association of ideas, etc.; while the inner room is useful for more refined investigation—e.g., for spectrometric research. The window in the side of the lecture room gives the lecturer a black background against which certain demonstrations can be made, without darkening the lecture room itself, far more effectually than against a black screen. (4) For acoustics there should be available a suite of three rooms, one of which should be made, as far as possible, sound proof, as well as light proof, and all of which should be connected by acoustic tubes for the transmission of auditory stimuli. (5) For work upon the sense of smell there should be a

special room, with tiled floor and glazed walls and especial ventilating arrangements. The rest of the laboratory proper should be taken up with large rooms, well aired and lighted, for class work in the practice courses; a set of small, closet-like rooms, occupied by advanced students; a series of rooms devoted to observations upon the lower animals; a centrally situated room, containing the measuring instruments (chronoscopes, chronographs, etc.), upon which a call may be made from any part of the laboratory; the private laboratories of the instructing staff; and a library and writing room. The only other feature of the laboratory that demands separate mention is (6) the workshop, which should be adequately fitted with the tools needed for wood and metal work and should have an abundant power supply. An excellent laboratory of this type, based upon the recommendations of Titchener (1900; see *Bibliography*), has recently been opened at the University of Moscow under the direction of Tchelpanow.

The instrumental outfit of the laboratory is described under the heading **PSYCHOLOGICAL APPARATUS**. A few points as regards furniture and fixtures may be noticed here. Every room should be supplied with gas, compressed air, and electricity, and certain rooms (for which absolute quiet is not essential) with water. The rooms employed for class work should have small low tables, accommodating each a pair of students, and shallow, glass-fronted wall cases to contain the instruments when not in use. Comfort on the part of the observer is essential to good introspection; for this reason there should be special narrow tables for experiments upon smell and taste, couches or reclining chairs for work upon the cutaneous sensations, and high desks for certain experiments upon visual contrast and after-images. The whole laboratory must be wired for telephone or bell signals, so that any two available rooms may be connected together for a particular investigation without disturbance to other workers by passage to and fro between them.

Research Laboratories. Aside from general physical, chemical, and other laboratories maintained by educational institutions or by national governments, mention should be made of special and private laboratories which have been established for investigations in certain fields. These usually are restricted in their scope to a certain problem or certain classes of problems, and usually their foundation and maintenance have been made possible by private interest. Thus, the Carnegie Institution of Washington (q.v.) maintains in that city the Geophysical Laboratory, concerned with problems involved in the formation of rocks and the structure of the earth, and also the Laboratory of Terrestrial Magnetism, both with complete instrumental and other equipment for the work in hand. The Carnegie Institution has in Boston a laboratory for the study of problems connected with nutrition, in Arizona a Desert Botanical Laboratory, and at Tortugas, Florida, a Marine Biological Laboratory. Likewise, the Rockefeller Institute for Medical Research maintains in New York a group of laboratories where investigations are carried on in various departments of experimental medicine and surgery, together with allied problems in physiological chemistry and similar fields. The tendency of these special laboratories is to emphasize not only aptitude for investigation, but also equipment and conditions

for efficient work, relieving the investigators from any financial or administrative worries, and placing at their disposal adequate resources, as well as providing suitable compensation while they are engaged in investigation.

The Rockefeller Institute (q.v.) is typical of a large laboratory for medical research, but there are also many others varying in size and scope in the different parts of Europe and the United States. There are such institutions devoted to cancer research, to the study of tuberculosis, to investigations on tropical diseases, on the diseases affecting domestic and other animals, and similar fields of activity. In addition laboratories are now an essential part of every well-equipped hospital, and routine investigations involving chemical analysis, pathological examinations, bacterial cultures, and other studies are conducted in properly equipped quarters, with adequate apparatus, especially light-power microscopes. Indeed the necessity for the laboratory in medical practice has grown beyond the facilities and possibilities of the private practitioner, and for purposes of diagnosis he now sends the specimens collected from patients to laboratories of one sort or another, where for a fee, in the case of private laboratories, expert investigators will make special examinations and reports, or examinations may be made at the laboratories of some board of health or other official body.

Municipal Laboratories. In recent years it has been found necessary and desirable for cities to maintain well-equipped laboratories, where various chemical, physical, biological, and other investigations may be made, with the object of safeguarding the health of the inhabitants of the city and securing increased economy in its various business activities. Thus, in practically every large city the water supply is regularly analyzed, in order to guard against possible contamination and impurities. This is usually done in a special laboratory equipped for the purpose, so that ordinary routine tests may be made rapidly and accurately. Likewise the gas for street lighting and for the domestic lighting of the city is every day photometrically determined, in order that its quality may be kept up to the standard specified by statute or contract. Furthermore, laboratories are provided in many cities for the regular testing of supplies, such as food to charitable and penal institutions, stationery, such as paper, hose supplied to a fire department, asphalt for paving, fuel, and a host of other articles that are obtained by the city through its purchasing department. Not only is it possible through these laboratories to examine the goods and determine whether they answer the specifications of the original contract or not, but also to provide more accurate and intelligent specifications, leading to the city securing the best article for the purpose at the most reasonable price. In fact, standardization is possible only through the work of the laboratory and technical experts.

Bibliography. *Das chemische Laboratorium der Ludwigs-Universität zu Gießen, nebst einem Vorwort von Liebig* (Heidelberg, 1842); Lang, *Das chemische Laboratorium an der Universität Heidelberg* (Karlsruhe, 1858); Kolbe, *Das neue chemische Laboratorium der Universität Leipzig* (Leipzig, 1868); "Les laboratoires de chimie," in *Encyclopédie chimique* (Paris, 1882); E. C. Sanford, "Some Practical Suggestions in the Equipment of a Psychological Laboratory," in

American Journal of Psychology vol. v (Worcester, 1892-93); Chandler, *The Construction of Chemical Laboratories* (Washington, 1893); Münsterberg, *The Psychological Laboratory of Harvard University* (Boston, 1893); Delabarre, *L'Année psychologique*, vol. i (Paris, 1895); Welch, "Evolution of the Modern Laboratory," in *Smithsonian Institution, Annual Report, 1895* (Washington, 1896); E. C. Sanford, *Experimental Psychology* (Boston, 1898); E. B. Titchener, "A Psychological Laboratory," in *Mind*, vol. vii (N. S., London, 1898), which gives a bibliography; Cajon, *History of Physics* (New York, 1899); Holman, "The Functions of the Laboratory," in *Technology Review*, vol. i (Boston, 1899); Arendt, *Technik der Experimentalchemie* (Hamburg, 1900); E. B. Titchener, "Equipment of a Psychological Laboratory," in *American Journal of Psychology*, vol. xi (Worcester, 1900); Davis, *Handbook of Chemical Engineering* (Manchester, Eng., 1901); Fischer and Gruth, *Der Neubau des ersten chemischen Instituts der Universität Berlin* (Berlin, 1901); Minot, in *Science*, vol. xiii (New York, 1901), which advocates small rooms of uniform size for laboratories in secondary schools; E. B. Titchener, *Experimental Psychology: A Manual of Laboratory Practice* (4 vols., ib., 1901-05); Smith and Hall, *Teaching of Chemistry and Physics* (ib., 1902); Chiabra, "Tendencies of Experimental Psychology in Italy," in *American Journal of Psychology* vol. xv (Worcester, 1904); Baskerville, "Some Principles in Laboratory Construction," in *Science*, vol. xxviii (N. S., New York, 1908). See also OBSERVATORY.

LABOR CHURCH. An organized effort to develop the religious life in the labor movement. The founder of the Labor church was John Trevor, a singularly gifted and devoted man. The first services were held in a hall at Manchester, England, Oct. 4, 1891, and in November the church was organized. Five principles were adopted. The service included the Lord's Prayer, hymns social in character, readings from Whitman, Emerson, Lamennais, Lowell, Whittier, Ruskin, Carlyle, and Maurice, and an address. In 1892 the *Labor Prophet* was started, and the *Labor Hymn Book* and tracts were published. The demand for similar churches was local and spontaneous. In July, 1893, a Labor Church Union of 14 churches was organized. By the next November there were 24 churches. The movement has not shown continued vitality.

LABOR COLONIES. Public or philanthropic institutions designed to relieve unemployment through provision of work and more especially to regenerate, by the discipline of labor, persons who are commercially unemployable or, where reformation is impossible, as in the case of epileptics or feeble-minded, to provide them with a permanent refuge. Among the classes most frequently cared for in labor colonies are discharged convicts, habitual vagrants, and drunkards. But other substandard workmen also drift to the colonies: persons who are thrown out of employment late in life by industrial inventions, neurasthenics and persons of insufficient will power to hold steady employment.

Reliable statistics of the number of unemployables and substandard laborers in a modern industrial state are wanting, but a safe estimate would assign from five to ten per cent of the adult population to these classes. It is probable that the proportion tends to increase, partly as a result of the breakdown of those who are men-

tally or morally weak under the increasing complexity of industrial and social life, but more especially as a result of the more severe requirements made by modern industry as a condition to regular employment. The establishment, either by trade-union activity or by public authority, of minimum standards of wages excludes from private employment additional classes, who have no other recourse than charity or the labor colony.

Of the public labor colonies (1914) the most important are those of Belgium. There are three of these colonies—Merxplas, Hoogstraeten, and Wortel. Under Belgian law, vagrancy and begging are penal offenses; persons arrested for such offenses are committed to the labor colonies for terms ranging from two to seven years. Degenerates, inebriates, professional vagrants, and others of the criminal type are committed to Merxplas; those whose destitution is due to no fault of their own are committed to the other two colonies. The number committed varies with industrial conditions, being somewhat larger in periods of depression, especially in the case of the latter class. The inmates of Merxplas number, as a rule, between 5000 and 6000; those of the other two colonies together between 6000 and 7000. The record of regeneration at Merxplas is low. In five-sixths of the cases, persons discharged from the institution drift back to it again. In 1904, 72 per cent of the inmates had been returned at least four times. In Hoogstraeten and Wortel only a small percentage is restored to economic independence. This is partly due to the advanced age of the male inmates, three-fourths of whom are over 40 and two-fifths over 60.

In Holland three colonies are maintained for beggars and vagrants: Veenhuizen and Hoom, with inmates ranging from 3000 to 4000, for men; and Leyden, for women. These colonies are practically a detention place for the permanently unemployable. There are also colonies supported chiefly by the charitable societies, open to all who apply for admission, of which Wilhelmsoord, Wilhelminasoord, and Frederiksoord are the most important, the last dating from 1818. Frederiksoord and Wilhelmsoord have an aggregate area of 1000 acres and care for over 3000 inmates. After a training period of two years colonists may be given holdings of between six and seven acres at a moderate rental, practically under life tenure, to work on their own account. Others acquire the necessary training for independent farming only after a residence of four years or more in the colony. Over 150 small farms have thus been established at Frederiksoord, and most of them are fairly successful.

The most significant experiment in labor colonies is the system under the control of the German Labor Colony Central Association, which has over 30 colonies in various parts of Germany. The movement was instituted by Pastor Frederick von Bodelschwingh, who in 1882 established a colony at Bielefeld in Westphalia. The principle adopted was that of offering work to all who might apply. Applicants are required to sign an agreement to remain at least two months and to abide by all the rules of the colony. Expulsion is the only penalty for infraction of the rules. The inmates are provided with abundant plain food, body linen, and shelter. They are worked under trained overseers and, while inefficient, prove for the most part willing and docile. The management at-

tempts to secure employment for as many as possible after they leave the colony. A very small bonus is credited to those who do satisfactory work and serves to provide them with clothes, tools, and perhaps a little ready money when they leave the colony. No segregation is attempted; discharged convicts, inebriates, confirmed vagrants, and those who are merely suffering under temporary misfortune are accepted upon equal terms. The same plan is followed in all the other colonies of the system. The colonies are under religious and philanthropic auspices, but are in part financed by the communes. Similar colonies have been established in Switzerland at Tannenhof and Herdern. The record of reformation in these colonies is excellent. In view of the mixed character of the material, it is natural that the majority, after leaving the colony, lapse again into their former habits. But there are numerous instances of men who have been restored to independence and self-respect.

In England the seriousness of the unemployment problem has led to great interest in the labor colony, but the results down to the present have been meagre. There is a colony for epileptics, caring for about 150 inmates, at Chalfont, and a colony for unemployables at Dunton, accommodating approximately an equal number. The Salvation Army maintains several colonies, of which the labor colony of Hadleigh is the best known. France has an important colony, La Chalmelle, in the Forêt de Traconne, about 50 miles from Paris, where wanderers picked up at the police stations in Paris are sent. As a rule those thus committed to La Chalmelle are not hopeless vagrants, but countrymen stranded in Paris, etc. The majority of them secure positions before leaving the colony.

In the United States three colonies have been founded by the Salvation Army: Fort Herrick, near Cleveland, Ohio; Fort Amity, in southern Colorado; and Fort Romie, Soledad, Cal. The last two are farm colonies, the first an industrial colony. For the farm colonies the practice prevails of sending, not single men, but entire families. Fourteen families were brought from Chicago to Fort Amity upon the establishment of the colony in 1898; the number was later increased to about 40. The history of the colony has been one of mixed success. Many of the original colonists soon left, and shifting about of population has characterized its experience. The highest degree of success has been obtained by renting land to the colonists. Fort Amity was at first wholly unsuccessful. The colonists brought from the city soon dispersed; later it was repopled by the poor from the surrounding country. In 1909 it accommodated some 25 families, who appeared to be contented and fairly prosperous.

In practically all instances labor colonies have made agriculture their chief occupation. The variety of tasks and the wholesomeness of work in the open air are important considerations; furthermore, the products can be made to supply a great part of the wants of the inmates. Agriculture cannot be the sole resource, since the population of a labor colony is continually fluctuating in volume and is likely to be smallest at the sowing and harvest seasons and largest in winter, when there is little work to be done. Most of the European labor colonies have been founded on unpromising land—bog and heath and waste—a circumstance arising out of the lim-

ited means at the disposal of the founders, but which turned out to be favorable to the enterprise, since surplus labor could be set at ditching, clearing, and fertilizing the land in open weather. Many colonies have developed subsidiary indoor occupations, such as basketwork, broom making, the making of boxes and crates, etc. From a financial point of view the industrial labor colony is a flat failure, but it is an open question whether, from the point of view of regenerating the substandard workman, a greater diversity of employments than the agricultural colony affords would not be desirable. The labor colonies have been least successful in dealing with the urban workman, and it is the latter who presents the more serious social problem.

The labor colony, whether under public or private auspices, cannot be made self-sufficing. Although the Bielefeld colony makes every effort to keep expenses at a low level, each inmate represents a net outlay of between \$1.50 and \$2 per week to be made up by subscriptions and donations. The French Colony of La Chalmelle costs the city about \$3 weekly per inmate. The Dutch colony at Wilhelmsoord makes a better financial showing than any other, costing the charity authorities hardly more than 20 cents a week per inmate. It is, however, to be borne in mind that a large proportion of the inmates of labor colonies would have to be supported at greater expense by public or private charity.

The existence of numerous labor colonies in Germany is said to have notably reduced vagrancy and mendicancy. Charitable persons, instead of giving alms, direct beggars to the labor colonies, where their primary wants are satisfied, but in return hard work is exacted. On account of its tendency to discourage indiscriminate giving and hence the maintenance of a vagrant class, the labor colony undoubtedly justifies its claim upon generous public support.

Bibliography. The labor colony is treated in most of the standard works on charities and corrections (q v) and on unemployment (q v). Excellent articles on the subject are given in the *Handwörterbuch der Staatswissenschaften*, "Arbeiterkolonien" (Jena, 1901), and in Bliss, *New Encyclopedia of Social Reform*, "Labor Colonies" (New York, 1908). Consult also: Berthold, *Die Entwicklung der deutschen Arbeiterkolonien* (Leipzig, 1887); Hobson, *Co-operative Labor upon the Land* (London, 1895); Department of Labor, *The Poor Colonies of Holland* (Washington, 1896); Dawson, *Social Switzerland* (London, 1897); id., *The German Workman* (ib., 1906); Lamb, *Social Work of the Salvation Army* (New York, 1909); Rowntree, *Land and Labor Lessons from Belgium* (London, 1910).

LABOR CONGRESSES. Assemblages of the representatives of organized labor. They owe their origin to the association of laborers in trade-unions. The congresses have been both international and national. The first International Labor Congress was called by the International Association of Laborers at Geneva, Switzerland, in 1866. About 60 delegates from England, France, Germany, and Switzerland were present, representing many kinds of labor. This congress urged the necessity for a firm alliance of laborers in order to maintain wages. Strikes, while a temporary necessity, were alleged to be due to transitory and abnormal conditions. The crux of the social question was

declared to be the question of equal exchange. The congress favored the supplanting of interest by means of mutual-credit organizations, condemned the industrial employment of women, and advocated technical education. The second International Labor Congress was held at Lausanne, Switzerland, in 1867, with delegates from the countries represented at Geneva and from Italy and Belgium. Attention was called to the close connection existing between political liberty and social reform. Coöperative associations were opposed on the ground that they were selfish in character, while social reform could only be brought about by an agency acting upon the whole society. In 1869 the Third International Labor Congress was held at Basel, Switzerland. At this Russia, Austria, Germany, Spain, England, Italy, France, and Switzerland were represented. This congress by a vote of 54 to 4 declared, "Landed property should be abolished, the soil belongs to society and is inalienable." It went further and demanded "the destruction of all states, national and territorial, and on their ruins the founding of the International State of Laborers." Other international labor congresses of less importance were held at Dresden (1871); The Hague (1872), the latter marked by a violent schism between the followers of Marx and those of Bakunin; Paris (1886); Berlin (1891); Zurich (1897).

In 1889 two Socialist labor congresses were held in Paris, with an attendance of 606 and 407 respectively. Arrangements were made for the calling of similar international congresses from time to time, and May 1 was appointed for a fête day for Socialistic organizations throughout the world. The majority of the persons in attendance were French, but, in the two congresses of 1889, 82 and 184 respectively came from other countries. The following table indicates the increasing attendance of foreign delegates at the succeeding congresses:

YEAR	Country	Total attendance	From country in which congress was held	From other countries
1891	Brussels	363	187	175
1893	Zurich	440	117	323
1896	London	714	475	239
1900	Paris	789	473	316
1904	Amsterdam	509	33	476
1907	Stuttgart	884	289	595
1910	Copenhagen	896	146	750

In 1912 an extraordinary congress was convened at Basel to protest against the Balkan War; 555 delegates, representing 23 countries, were in attendance. Questions of international polity, peace, and war have since 1900 occupied an increasing part in the deliberations of the congresses.

Associations admitted to representation in these congresses include not only those that are avowedly Socialistic, but also all labor organizations basing their activity on the class-struggle theory and recognizing the necessity of political and parliamentary activity. Purely economic labor organizations are not represented, nor are anarchistic associations. Originally the basis for voting in the congresses was the country, each nation having one vote. At present voting power is based roughly upon the strength of the Socialist labor movement in the several coun-

tries. Germany, France, Great Britain, Austria-Bohemia, and Russia have each 20 votes; Italy, 14; the United States, 12; Belgium and Sweden, 10 each; Denmark, Poland, and Switzerland, 8 each; Finland, Holland, and Hungary, 6; Spain and Norway, 5; Turkey, 4; Argentina, Bulgaria, Rumania, Servia, Luxembourg, Bosnia, and Herzegovina, each 2. The apportionment may be changed at any congress. In the interim between congresses the International Socialist Bureau, established in 1900, acts for the organization. See SOCIALISM; TRADE-UNIONS

LABOR DAY. A day set apart as a legal holiday in all of the States of the Union (except Maryland and Wyoming, in which States it is customarily observed by proclamation) and in Alaska and the District of Columbia. In 1882 the Knights of Labor held their general assembly in New York City during the month of September, and on the 5th a parade was organized by the Central Labor Union of that city. The next year a parade was held on the first Monday in September, and in 1884, on the resolution of George R. Lloyd, one of the Knights of Labor, it was decided that all future parades should be held on that day, and that the day should be known as Labor Day. Workingmen's organizations all over the country then began an agitation to induce the State legislatures to declare the day a legal holiday, and on March 15, 1887, Colorado enacted a law to that effect and was followed by New Jersey, New York, and Massachusetts. The great majority of the States have selected the first Monday in September as Labor Day. In European countries labor organizations celebrate on the first day of May. This custom started in 1890, but was at first opposed, because of the rioting and disturbance which often attended it. At present it is observed generally without trouble or interference.

LABORDE, lâ'bôrd', ALEXANDRE LOUIS JOSEPH, COUNT DE (1774-1842). A French author and politician, born in Paris. At the outbreak of the French Revolution he joined the Austrian army and until 1797 fought against the Republic. He returned to France after the Peace of Campo Formio and went to Spain in 1800 as military attaché to Lucien Bonaparte. His *Voyage pittoresque et historique en Espagne* (2d ed., 1823) and *Itinéraire descriptif de l'Espagne* (3d ed., 1828) show his close study of the country and its people. In 1822 he was elected from Paris to the Chamber of Deputies, where he consistently supported the Liberal side. During the Revolution of 1830 his vigorous protests against the ordinances of Charles X won for him the regard of Louis Philippe, who subsequently made him his aid and subprefect of the Seine. His other works include: *Les monuments de la France classés chronologiquement* (1816-26); *Voyage pittoresque en Autriche* (1821-23); *Description des nouveaux jardins de la France et de ses anciens châteaux* (1808-15), *Versailles, ancien et moderne* (1840).

LABORDE, LÉON EMMANUEL SIMON JOSEPH, COUNT DE (1807-69). A French archaeologist and author, born in Paris, son of Count Alexander Louis Joseph Laborde. After a course of study at the University of Göttingen, Germany, he traveled in the Orient with his father, and, owing to his remarkable ability as a draftsman, rescued from oblivion many ancient monuments in Asia Minor and Syria. He afterward explored alone Arabia and the valley of the Nile. On his

return in 1828 he became for a few months Secretary of the French Embassy at Rome, was elected a member of Parliament in 1840 and 1842, and was called to the Senate in 1868. From 1845 to 1848 he was curator of the Museum of Antiques at the Louvre and in 1857 director general of the archives of the Empire. He wrote many magazine articles and books, perhaps the most important of which is the *Ducs de Bourgogne* (Paris, 1851). Others are *Voyage de l'Arabi Pétrée* (1833); *Voyage en Orient* (1837-64); and numerous volumes on the history of engraving and painting, Paris libraries, the ancient monuments of Paris, French archives, and the jewels of the Louvre.

LABOR EXCHANGES. 1. A class of institutions founded by the followers of Robert Owen (1832-35), which were designed to bring about the exchange of the products of labor without the intervention of money. Stores were founded which were to buy and sell commodities for "labor notes," the amount of time spent in producing a commodity being the basis on which it was valued. No difference was made for different kinds of labor. The plan was soon found to be impracticable. 2. The term is frequently used to designate an ideal employment bureau under public management, which should obviate the common evil that at one and the same time a need for labor exists in some occupations or localities, while many men are unemployed. It is generally recognized that labor, owing to the ignorance and inertia of the laboring classes, does not readily respond to the competitive laws which tend to place productive forces where they are most efficient. The better distribution of labor, it is held, ought to be one of the cares of the state, since under present conditions society loses much productive energy, while bearing an unnecessarily large burden of pauperism and crime.

So-called labor exchanges (*bourses de travail*) exist in numerous European cities, as well as in some of the American States and in Australasia, but they are not equipped with machinery efficient enough to grapple with the larger problems of the distribution of labor. See EMPLOYMENT BUREAU

LABORI, lâ'bô'rê', FERNAND GUSTAVE GASTON (1860-). A French lawyer. He was born at Rheims, studied law at Paris, in England, and in Germany. He was called to the bar of the Court of Appeal in 1884 and in 1887-88 was secretary of the Conference of Advocates. In 1911-13 he was president of the Barrister's Society of Paris. He conducted several notable cases, among them the defense of the assassins Duval and Chevallereau, the anarchist Pini, and the dynamiter Vaillant. He was advocate for Gabriel Compayré in his famous libel action against Numa Gilly and defended Alfred Dreyfus (q.v.). On Aug. 14, 1899, during the final trial of Dreyfus at Rennes, he was shot in the back while on his way to the court and was dangerously wounded, but recovered sufficiently to resume his defense of Dreyfus. He had charge of several literary cases, notably those of *La Plume* and the *Théâtre Réaliste*. His defense of M. Zola (1898), who was charged with libeling the President and the army, was the occasion for a display of marked ability. He also represented Thérèse Humbert in the well-known Crawford case, and, in 1914, Madame Caillaux, whose acquittal he secured (see CAILLAUX, CALMETTE). With others, M. Labori under-

took the publication of the *Répertoire encyclopédique de droit français* (12 vols.). In 1906 he was elected to the Chamber of Deputies for Fontainebleau. He founded the *Grande Revue* and the *Revue du Palais* (1897), for a time was editor in chief of the *Gazette du Palais*, and wrote *Affaire Zola: Plaidoirie* (1898).

LABOR LAW. See CONTRACT LABOR LAW.

LABOR LEGISLATION. An inclusive term used to denote the body of statutes which in any way affect the labor contract or the relation of the employer and the employed. The first step was taken in the so-called factory acts of Great Britain, designed to improve the sanitary conditions prevailing in workshops and factories and safeguard the health of the laboring population. In the subsequent development many other points in the mutual relations of employer and employed have been the subject of legislative and administrative regulation, so that to-day the mass of statutory enactment on these topics is almost

In the industrial population developed later than in England, and labor legislation is of a later date. With the growth of modern industry together with the prevalence of universal suffrage the enactment of such laws did not encounter the same difficulties as in England. There has been no lack of legislation, though it has frequently been assumed that such laws would enforce themselves, and no adequate machinery was provided to insure their execution. In later years factory inspection has been widely introduced, though in many States it is not equipped with adequate machinery for the discharge of the duties imposed upon it. On the other hand, the progress of unionism has made the workingmen alert in the maintenance of their legal rights, and their officials have done much to render labor legislation effective.

Labor legislation is a matter of State concern, and while in America the laws of one State have frequently been enacted bodily by other States, there is still much diversity among the States. In reviewing the labor legislation in force in the United States we must content ourselves with a general account of the various types of enactments without attempting to specify where such laws are in force. The most usual subjects of legislation concern the hours of labor, mode of paying wages, and protection of machinery to avoid accidents.

Hours of Labor. Twenty-four States have laws on the subject of hours of labor in general employments, which laws are of course limited to women and minors. Laws restricting the hours of labor in employments involving danger to health or life of the employee or to the public safety are less general, but are increasing in number. The employments in question include mines and smelters, caissons, brickyards, bakeries, railroads, street railways. On a somewhat different basis are laws restricting hours of labor on public works and on work done for the public authorities by private contractors.

Most of the States prohibit the labor of children in factories, workshops, and mines before a certain age is reached. In most States this age is 12 or 14 years, the latter age gaining upon the former. Limitations of the hours of labor per day and per week for minors who have not reached the age of 18, or sometimes as much as 21 years, are frequent. This limit is usually 10

hours per day. Some States with a 10-hour day provide that the weekly work shall be less than 60 hours (55 in Ohio and New Jersey, 54 in Massachusetts). Some of the States impose further restrictions. For children under 16, whose attainments do not reach certain standards, hours must generally be so adjusted as to permit of school attendance for a portion of the year, or to permit attendance at night schools.

Several of the States which regulate the labor of minors as above stated make no restrictions upon the labor of adult women. In others, however, such labor is subject to the same rules as that of minors. Absolute prohibition of woman's labor in mines exists in several of the States.

Payment of Wages. Laws fixing the intervals at which wages shall be paid have been enacted in several States, but they are of doubtful validity. More frequent is the attempt to prescribe that all payments shall be made in money, by declaring illegal payments in store orders and the like.

Protection of Health, etc. Laws designed to protect the workmen against accident or disease are especially applicable to labor in inclosed places, in workshops and factories, and in recent legislation in so-called sweatshops. Among other things, such laws aim to require adequate fire escapes, outward-opening doors, guards for dangerous machinery, elevators, belting, etc., connection of rooms where machinery is used with engine rooms by tubes or bells. Other laws provide that machinery shall not be cleaned while in motion, and frequently that women and minors below a certain age shall not be employed in cleaning machinery; that a certain number of cubic feet of air space for each person employed shall be provided, that fans and other contrivances shall be used to rid the air of noxious vapors and dust. Similar in character is the legislation in regard to sweatshop production—i.e., the manufacture of goods, particularly clothing, in dwellings and tenements—which aims to restrict the production of goods in unsanitary places. These laws either place such restrictions as a part of the general factory law or seek to prevent overcrowding by restricting such labor to members of the family living in the dwelling, or requiring a license for all persons engaged in such production.

Employers' Liability. Under the common law the employer is liable in pecuniary damages for the bodily injury or death of his employees by accident when in his employ, in so far as such accident is not due to the negligence, direct or contributory, of the employee. But the rigor of this rule was greatly modified by the principle which relieved the employer of liability in case the accident was traceable, not to his negligence, but to that of another employee. (See FELLOW SERVANTS; EMPLOYERS' LIABILITY.) Strictly construed, this doctrine made it practically impossible for the laboring man to avail himself of this liability, as he was forced to prove the negligence of the employer. This difficulty has been invoked in England and in many States to remove this difficulty. Such laws declare the employer directly liable for all accidents except in case of negligence of the person injured, or in a less extreme form attempt to define who are fellow servants. The effect of such legislation is to place upon the employer the burden of proof that the injured workman was negligent. Such laws apply in a number of States to railroads, but in a very few cases to employees

generally. In Europe such laws are more frequent and are especially favorable to the workman in England and Switzerland. In recent years it has come to be recognized that employers' liability, even broadly interpreted, cannot adequately protect the workman against occupational risks. Following the lead of Germany and other European countries, American States have enacted workmen's compensation laws, requiring indemnification for all injuries not the result of gross negligence on the part of the injured. Such laws applying either generally or to specially hazardous industries were enacted in 24 States in the period 1910-14.

The labor legislation of England has not only been imitated in the United States, but has been widely copied in the industrial countries of continental Europe and in the English colonies. While certain general features, such as factory inspection and limitation of the hours of labor of children and women, are common to all, the labor codes of the various countries show marked individuality, as the result of peculiar conditions or of historic tradition. Hence we find the different aspects of the labor laws in different stages of development in the different countries.

Germany. In Germany (and this is true of continental Europe generally) the main interest in labor legislation has centred about the question of employers' liability and the evils it is designed to meet. After struggling for some time with a liability law which gave very unsatisfactory results, Germany was led to introduce the insurance principle as a means of alleviating the suffering caused by accidents to workmen in industrial pursuits. From protecting the workman and his family from the effects of accidents directly attributable to his occupation, it was an easy step to extend this protection to sickness, which in many cases was also incident to the occupation. A still further step has been taken in providing by insurance against the incapacity of old age. This dominant feature of the legislation of continental countries is treated more fully in the article **WORKINGMEN'S INSURANCE**.

Australia. Of all countries, the Australasian colonies of Great Britain have been most radical in their labor legislation. Industrial labor is most directly affected by the laws providing for compulsory arbitration of all labor disputes. See **LABOR AND CAPITAL, RELATIONS OF; TRADE-UNIONS; CHILD LABOR**.

Bibliography. The most complete guide to the labor legislation of the United States is contained in the *Report on Labor Legislation* (Washington, 1900), which forms vol. v of the *Report of the United States Industrial Commission*. The compilation of labor laws issued in 1892 as the *Second Special Report of the United States Department of Labor* is fuller in its citation of laws. The United States Bureau of Labor Statistics issued a full summary, *The Labor Laws of the United States, with Decisions of the Courts Relating thereto* (Washington, 1914). *The Annual Summaries of State Legislation* issued by the New York State Library can also be consulted with profit. Valuable information on current legislation is published by the American Association for Labor Legislation. Details of labor legislation are also found in the *Bulletins of the United States Department of Labor* (Washington, 1898 et seq.), where especial attention is given to foreign labor laws; Florence Kelley, *Some Ethical*

Gains through Legislation (New York, 1905). Among foreign sources attention may be directed especially to the *Archiv für social Gesetzgebung und Statistik* (Tübingen, 1888 et seq.); *Annuaire de législation de travail*, issued since 1897 by the Belgian Office du Travail (Brussels); Ignaz Jastrow (ed.), *Textbücher zur Studien über Wirtschaft und Staat*, vols. i-iii (Berlin, 1912-14).

LABOR ORGANIZATIONS. Under this head are included those more or less prolonged associations of productive workers whose principal purpose is the improvement of the conditions of employment. The labor organization is thus differentiated on the one hand from the strike—a temporary association—and on the other hand from friendly societies and Socialist organizations which, though frequently recruited exclusively from the ranks of labor, are chiefly devoted to other ends than the improvement of the conditions of employment. Among labor organizations two distinct classes are discernible—those organized on the trade or occupational principle and those which transcend occupational bounds and attempt to amalgamate in a single, homogeneous organization all classes of labor. The former—the trade-union—is treated in detail in the article on **TRADE-UNIONS**, where a further discussion of the relation of the trade-union to the general labor organization is given. The latter class alone is considered in the present article, and for brevity the term "labor organization" will be restricted to this group, the nontrade organizations.

In England the first great wave of labor organization came about 1830. The repeal of the Combination Acts in 1824 had been followed by an unprecedented activity among trade-unions, which resulted in an outburst of strikes that were as generally unsuccessful as they were violent and costly. The conviction became general among wage earners that the old trade-union was too exclusive in membership and too conservative in policy, and this conviction was increased by the Socialistic agitation of Robert Owen, William Thompson, and others. In 1829 a Grand General Union of the United Kingdom was established among the textile workers. In 1830 some 20 organized trades united in the formation of the National Association for the Protection of Labor. In January, 1834, came Robert Owen's Grand National Consolidated Trades Union.

The character of this organization was strikingly similar to that of the Knights of Labor. Both began as secret organizations with elaborate ritual and fantastic ceremonies, and both abandoned at a subsequent period the policy of extreme secrecy. Both admitted trade-unions as units, but both placed the greater emphasis upon amalgamation and established local unions of mixed membership, known in the Grand National Consolidated as miscellaneous lodges. Both laid special emphasis upon the organization of women and unskilled laborers, both looked forward to the supersession of the wage system by some scheme of coöperative production, and both conducted disastrous experiments in coöperation. Finally, both grew with unhealthful rapidity; "within a few weeks the union appears to have been joined by at least half a million members."

The Grand National had contemplated a universal strike as the first step towards general coöperation, but the strikes which it inaugu-

rated proved unsuccessful, and in August, 1834, it was transformed into the British and Foreign Consolidated Association for Industry, Humanity, and Knowledge. This in turn spent its strength in cooperative experiments, and from that time until the appearance of the new unionism English labor organizations were chiefly, though not exclusively, characterized by the attempt to foster cooperative production.

With the reawakening of English Socialism in the early eighties came another determined assault upon the conservative methods of the old trade-unions. The feeling became prevalent among those trade-unionists who were also Socialists that the progress of the masses was actually hindered by the aristocratic exclusiveness of the skilled trades, whose unions were inclined to build up extensive systems of insurance benefits and avoid politics, particularly Socialism. Among labor leaders the struggle centred largely about the control of the Trade Union Congress; in the world at large the efforts of the new unionists were characterized by the attempt to organize the unskilled workers of the cities, with the ultimate object of forming a large party in favor of municipal ownership and later of introducing municipal Socialism. In London the efforts of the new leaders—John Burns, Tom Mann, Benjamin Tillet, and others—were crowned with unexpected success. In 1888 the match girls organized and won a strike. In 1889 the gas stokers were organized into the Gasworkers' and General Laborers' Union and succeeded in winning an eight hour day with a slight increase of wages. In 1890 came the famous strike of the London dock laborers, which, under the able leadership of John Burns and with the generous support of the public, resulted in an epoch making victory. The result of these successes was the complete victory of the new unionists in the Trade Union Congress and a large crop of organizations among the unskilled workers, all of which are marked by the common characteristics of low dues, few or no insurance benefits, aggressive trade policy, political activity, and a strong leaning towards Socialism.

In the United States, as in England, labor organizations first appeared in considerable numbers about 1830. The earliest manifestations of the new movement were political. In 1829 a workingman's ticket was placed in nomination in New York, and one delegate to the State Assembly was elected. This political movement spread into Pennsylvania and Massachusetts and contributed to the formation of the Loco Foco party (q.v.), which played an important part in the political movement of that period. Political organization hastened organization for trade purposes, and about 1833 we hear of numerous municipal federations of trade-unions, one of which, the General Trades Union of the City of New York, succeeded in having its president elected to Congress. In 1832 the New England Association of Farmers, Mechanics, and Workingmen was organized at Boston, a typical labor organization of the period, which seems to have devoted itself to debate and educational work.

The three most important labor organizations which appeared before the Civil War were all organized in 1845: the New England Workingmen's Association in March, the New England Protective Union in September, and the Industrial Congress of the United States in October. The first two were closely identified, the Protec-

tive Union being largely devoted to cooperation. All three exhibited the familiar characteristics of the early labor organization. Unskilled laborers, women, farmers, and even other employers were admitted. The most diverse reforms were championed: abolition of slavery, women's rights, land nationalization, the withholding of supplies from the American army in Mexico. The Socialistic character of the movement is shown by the fact that George Ripley and Charles A. Dana were prominent among the founders of the New England Workingmen's Association, while the initial meeting of the association was addressed by Robert Owen and Albert Brisbane, the father of American Socialism.

All three of these associations became moribund in the early fifties, and from that time until the end of the Civil War the most striking phenomenon is the multiplication of trade-unions of the narrower kind. But during this period, also, there were not lacking men, even among the prominent trade-union leaders, who characterized the trade-union as exclusive and warmly advocated the formation of broader organizations which would elevate the masses by other means than the strike and the regulation of apprenticeship. In 1866 their efforts resulted in the formation of the National Labor Union, which, starting with a large membership and good prospects, wasted its strength on the attempt to found a Labor Reform party and died in 1870 "of the disease known as politics." A slight connection may be traced between the National Labor Union and the International Workingmen's Association, which was founded in London in 1864 and moved its headquarters to New York in 1872, soon after which it disappeared. The International, however, came under the domination of Karl Marx and was rather a Socialistic party than a labor organization.

The work laid down by the National Labor Union fell into the hands of a remarkable labor organization, the Noble Order of the Knights of Labor (See KNIGHTS OF LABOR). Although it began as a local union of garment workers and in the course of its existence chartered many national unions, it contemplated from the very beginning something essentially hostile to the exclusive trade-union. Following out this policy, no effort is made to restrict the membership to wage earners, a universal practice among trade-unions, but in general persons over 16 years of age are eligible to membership. In their district assemblies, and even in the local assemblies, the members of different trades are amalgamated without respect to occupational limits. Finally, the government of the Knights is far more centralized than any federation of trade-unions; the general executive board, to take a single illustration, may suspend any local or district officer, expel any member, revoke any charter, and by a unanimous vote may settle any strike. In other words, the Knights of Labor is a centralized national union of mixed trades and not a federation.

The latest phase in the development of labor organizations is represented by the Industrial Workers of the World (q.v.).

Historically considered, the labor organization is distinguished from the trade-union by an absence of exclusiveness, by the effort to secure the benefits of organization for the unskilled workers, by a more emphatic note of altruism

by a decided preference for coöperation, for legislative and political action over strikes and boycotts, and, it must be admitted, by a general tendency to take short cuts to universal reform. On the whole the labor organization has been far less productive of tangible results than the trade-union. But its work has not been in vain. The trade-union of to-day is far less exclusive, far less monopolistic than it was before the appearance of the Knights of Labor and the new unions of England. Most important of all, the trade-union now realizes the truth of that fundamental thesis of the Knights of Labor—that machinery is fast obliterating the line between the skilled and unskilled trades—and devotes a large share of its strength and funds to the organization of the lower classes of labor. This is the primary object of the American Federation of Labor. See **LABOR, AMERICAN FEDERATION OF.**

For an account of a momentous struggle, which bears much resemblance to the contrast between the labor organization and the trade-union, see *Problems of Organization* under **TRADE-UNIONS**, where a general bibliography is also given. See also *Socialist Parties* under **SOCIALISM**.

LABOR PARTY, BRITISH. A political party organized on its present basis in 1906. The origin of the party is traceable to a resolution adopted by the Trade Union Congress at Plymouth in 1899 to call a conference of trade-unions, Socialistic, coöperative, and other labor bodies to consider the problem of securing adequate parliamentary representation for labor. The conference, held in February, 1906, created a committee, known as the Labor Representation Committee, under the secretaryship of J. Ramsay Macdonald. The aim of the committee was to secure, where possible, the election of candidates identified with labor interests, where this was impracticable, to throw labor support to candidates of regular parties who were sympathetic to labor. The committee was composed chiefly of representatives of the trade-unions, but the Fabian Society and the Independent Labor party were given each one representative on the executive committee.

In 1900, 15 candidates were indorsed by the committee, of whom two were returned. Two candidates in by-elections between 1900 and 1904 were elected with the indorsement of the committee. In 1904 the committee adopted the policy of paying its representatives in Parliament £200 a year to overcome the handicap under which labor representatives would suffer in giving unpaid parliamentary service. In the general elections of 1906, 30 out of 50 candidates indorsed by the party were elected. As there were a considerable number of other representatives elected who were avowedly sympathetic with labor, it was felt that the time was ripe for the organization of a labor party. This was effected later in the same year. The labor party thus organized continued the tactics and the aims of the Labor Representation Committee.

The representatives of the Labor party numbered 39 out of 670 in the House of Commons. In view of the practical equality in strength of Unionist and Liberal parties in the House, the Labor party has, since 1910, been able to exert an influence upon legislation quite out of proportion to its numbers and has played a prominent part in shaping recent social legislation in the United Kingdom. Consult: Joseph Burgess, *John Burns: The Rise and Progress of a Right*

Honourable (Glasgow, 1911); Fred. Henderson, *Socialism and the Labor Party* (London, 1912); G. S. Penfold, *Labour Party under a Search Light* (ib., 1912); A. W. Humphrey, *A History of Labour Representation* (ib., 1912); Gerhart Guetler, *Die englische Arbeiterpartei; ein Beitrag zur Geschichte und Theorie der politischen Arbeiterbewegung in England* (Jena, 1914).

LABOR PROBLEMS. The rise of capitalistic industry, creating a social class whose only resource is the sale of their labor, has brought to the front a new group of social problems, which are commonly known as labor problems, or, more simply, as the labor problem. The determination of the just portion of labor in distribution, the social enforcement of the canons of distribution established, and the assurance to the laborer of tolerable conditions of life are the essence of the problem.

In the first quarter of the nineteenth century educated opinion viewed free competition as a force capable of bringing about the best possible solution of the problem. The greatest freedom of contract would place each individual where his productivity was greatest and assure him of the greatest reward compatible with the maximum of social happiness. It was soon perceived, however, that the freedom of contract between employer and laborer was largely illusory, owing to the ignorance and helplessness of the latter. Especially was this true in the case of children, who were often bound to the employer by parish authorities or placed under his control by unnatural parents. A party arose demanding the state regulation of the labor contract in favor of the weak. (See **LABOR LEGISLATION.**) The extent of government regulation was the concrete form assumed by the labor problem in England from the second decade of the nineteenth century.

Contract relations between the adult laborer and the employer were on an unsatisfactory basis so long as the individual laborer dealt with the employer, or perhaps a few employers. Partially as a result of this disadvantage of position, laborers began to combine in trade-unions (q.v.), believing that thus they might better their position without the tardy intervention of the state. The struggles between combined labor and the employer gave a new impetus to Socialism. Many students of social science believed it to be necessary to eliminate the employer by founding an organization based upon free association (see **FOURIER, FOURIERISM**), on coöperation (q.v.; see also **OWEN, ROBERT**), or on the appropriation by the state of the means of production. (See **SOCIALISM, MARX, KARL**.) Later the view came to be widely held that the true solution of the labor problem lay in the merging of the interests of employer and employed by a system of profit sharing (q.v.), by inducing laborers to purchase shares in the corporation employing them, or by the development of an ethical relation between employer and employed, the employer making it his care to provide for the moral and material welfare of his laborers, both in the factory and in their homes (See **KRUPP FOUNDRIES, SOCIAL WORK AT.**) State and corporate provision of funds to insure against invalidity and old age (see **OLD-AGE PENSIONS; WORKINGMEN'S INSURANCE**) represents a new development of thought, aiming to free the laborer from the constant danger of pauperism and so to render him less discontented with the prospect of remaining a wage-earner throughout his life. Industrial arbitration, vol-

untary and compulsory, represents another comparatively recent solution for the evil of industrial discord.

The modern tendency is to treat the labor problem as an exceedingly complicated one which cannot be solved by any single remedy. Extension of factory legislation, encouragement of the formation of responsible trade-unions, arbitration, identification, wherever possible, of the interests of employer and employed, are recognized to be among the more important factors of the solution of the problem. Whatever has hitherto been accomplished, however, in behalf of labor, and whatever measures are advocated for further improvement, concern almost exclusively the factory laborer. There remains a large class consisting of the day laborer of the cities and the agricultural laborers, who have hitherto been unable to combine successfully to better their positions, and whose conditions of employment are so varied and uncertain that little can be done for them by legislation. These classes are, however, diminishing in numbers relatively to the laborers employed in factories, and with the progress in public education and consequent improved mobility of labor, may be expected to share in some measure the advantages secured by the factory laborers.

In addition to the references given in the text, see CHILD LABOR, COLLECTIVISM, EIGHT-HOUR DAY, EMPLOYMENT BUREAU, FACTORY INSPECTION, INDUSTRIAL REVOLUTION, LABOR; LABOR CONGRESSES, LOCKOUT, SOCIAL DEMOCRACY, STRIKES; SWEATING SYSTEM, WAGES.

LABOR REPRESENTATION COMMITTEE. See LABOR PARTY, BRITISH

LABOR UNION, THE AMERICAN. A Socialistic labor organization whose membership is largely confined to the States of Colorado, Idaho, Montana, Washington, and Wyoming. It was organized in May, 1898, as the Western Labor Union, but widened its scope at the Denver Convention of 1902, when the present name was adopted. In composition it is a federation of trade-unions, but it has pronounced the familiar methods of the old trade-unions unsatisfactory, and formally declared itself in favor of political action and international Socialism. The officers consist of a president, vice president, secretary treasurer, and an executive board of nine members, including the president and vice president. The officers are elected biennially by a referendum vote of the general membership. The government is more centralized than the ordinary federation of trade-unions, the executive board, e.g., may depose any general officer, and affiliated organizations are not permitted to strike without the approval of the executive board. Probably the most important organization affiliated with the American Labor Union is the Western Federation of Miners. The official organ is the *Voice of Labor*, published weekly at the headquarters in Butte, Mont. See LABOR ORGANIZATIONS

LABOUCHÈRE, la'bōō'shâr', HENRY, BARON TAUNTON (1798-1869). An English statesman of Huguenot descent. The eldest son of Peter Cæsar Labouchère, of Hylands, Essex, he was born on Aug. 15, 1798. His father, a partner in the banking house of Hope & Co., of Amsterdam, settled in England and married the daughter of Sir Francis Baring. Henry was educated at Winchester and at Christ Church, Oxford, where he graduated B.A. in 1821 and M.A. in 1828. He also studied law at Lincoln's Inn, but

did not enter the profession. In 1824 he made a visit to Canada and the United States to study the working of their institutions. In 1826 he was elected M.P. for St. Michael, from 1830 to 1858 he sat for Taunton, and in 1859 he was made Baron Taunton. He became a strong Liberal in English politics and for many years was identified with the support of the measures and the initiation of the policy of the party of progress. From 1832 to 1858 he occupied successively the offices of Junior Lord of the Admiralty, Master of the Mint, Vice President of the Board of Trade, Privy Councilor, Colonial Undersecretary, Undersecretary of State for War, President of the Board of Trade, Chief Secretary for Ireland, and Secretary of State for the Colonies. He had no direct heir, and his title became extinct at his death, on July 13, 1869.

LABOUCHÈRE, HENRY DU PRÉ (1831-1912). An English journalist and politician, the eldest son of John Peter Labouchère. He was born in London, Nov. 9, 1831, was educated at Eton and at Trinity College, Cambridge, and entered the diplomatic service under the auspices of his uncle, Lord Taunton. He was in the diplomatic service from 1854 to 1864, part of the time as a member of the British Legation at Washington. From July, 1865, to April, 1866, he was in Parliament for Windsor, till he was ousted on petition. In 1867 and 1868 he sat for Middlesex. He represented Northampton from 1880 to 1906. Under the signature "The Besieged Resident," his letters from Paris during the siege (1870-71) to the London *Daily News* attracted considerable attention. They were published in book form (3d ed., London, 1872). In 1876 he established *Truth*, a society and political journal, and afterward became also one of the proprietors of the *Daily News*. *Truth*, celebrated for its acute censorship of public matters, involved him in numerous libel suits, without slackening, however, his zeal as an enemy of sham and corruption. He was an earnest advocate of the Irish Home Rule cause, but in 1890 refused to follow Parnell in his attacks upon the English wing of the party. As a member of the royal commission to inquire into the Jameson raid of 1896, his pertinent queries and incisive criticism were particularly disconcerting to the party of Cecil Rhodes, and his pro-Boer sympathies were marked during the South African War. He retired from political life in 1905 and died in Florence, Jan. 15, 1912. Consult McCarthy, *British Political Portraits* (New York, 1903), and Thorold, *The Life of Henry Labouchère* (ib., 1914).

LABOULAYE, la'bōō'lâ', EDOUARD RENÉ LEFEVRE DE (1811-83). A French jurist and publicist, born in Paris. He was a student of law, devoting himself early in life to continental legal history with singular energy and intelligence. At the age of 28 he became known by an elaborate work, entitled *Mémoire sur l'histoire de la propriété foncière en Occident* (1839). In 1841 he published an essay on the life and doctrines of Frederic Charles de Savigny and became an advocate in the Royal Court of Paris. In 1843 appeared *Recherches sur la condition civile et politique des femmes*, and this was followed two years later by *Essai sur les lois criminelles des Romains*. Each of these works attracted great attention among the learned and contributed to revive in France the study of the history of law. In 1849 he became professor

of comparative jurisprudence in the Collège de France. Under Napoleon III he associated with the men who endeavored to revive public spirit in France. He wrote with enthusiasm and intelligence on the institutions of free America, and his lectures on this subject, during and after the war for the preservation of the Union, were extremely popular in Paris. Laboulaye had the advantage of a handsome personal presence and winning address, and his lectures on law had attraction even for those who had no interest in its study. In 1863 he published *Paris en Amérique*, in which he humorously employs a supernatural agency to transport a Frenchman with his family into the midst of American family life and town excitements at a period when disaster had come to the national arms during the War for the Union. The veiled drollery of the situations by which he lampoons some of the peculiarities of the Napoleonic government, making them ridiculous while defending them with all the ardor of French patriotism, is among the finest specimens of irony extant. This book went through upward of 30 editions in Paris and was translated into English. In a similar vein of political satire were his tales *Contes bleus* (1864), *Nouveaux contes bleus* (1865), *Le prince Canuche* (1865). The last ran through many editions and did much to pave the way to the easy dropping out of the Napoleonic dynasty in 1870. The following list of Laboulaye's works exhibits the intellectual activity and scope of his life: *Histoire politique des Etats-Unis 1620-1789* (1855-66); *Etudes contemporaines sur l'Allemagne* (1856); *La liberté religieuse* (1858); an introduction to Fleury's *Institution au droit français* (1858); *Abdallah* (1859), an Arabian romance; *La propriété littéraire au XVIIIème siècle* (1859); *Les Etats-Unis et la France* (1862); *L'Etat et ses limites* (1863); *Etude sur la politique de M. de Tocqueville* (1863); *La république constitutionnelle* (1871). Laboulaye likewise translated, from English into French, Walter, *On the Law Proceedings of the Romans*, Channing's social works, and Channing *On Slavery in the United States*, with an essay on his life and doctrines; also Franklin's *Memoirs and Correspondence*, with an introduction. His contributions to French reviews, legal and political, and to the journals of Paris, were very numerous. He died May 24, 1883. Consult John Bigelow, *Some Recollections of the Late Edouard Laboulaye* (New York, 1889), containing a bibliography.

LABOURDONNAIS, la'bōōr'dō'nā', COMTE BERTRAND FRANÇOIS MAHÉ DE (1699-1753). A French naval officer, born in Saint-Malo. He entered the service of the French East India Company as a lieutenant in 1718 and was promoted to the position of captain in 1724. In 1735 he became Governor-General of Ile de France and Ile de Bourbon and received command of a squadron in 1741. In the war between England and France he gained a victory over an English fleet, near Madras, and captured that town in 1746. Owing to his disagreement with Duplex (q.v.), Governor-General of the French Indies, concerning the terms offered to the English, he was recalled to France in 1748 and imprisoned in the Bastille for three years. Some authorities ascribe his disgrace to Duplex's jealousy. In 1751 he was tried by a commission appointed by the Council of State and acquitted. He was restored to liberty, but

his spirit was crushed, and he died in poverty in 1753.

LAB'RADOR'. A dependency of Newfoundland (q.v.), and the most easterly part of the mainland of British North America, consisting of a strip of coast, with the adjacent chains of islands, extending from the southwesterly extremity of the Strait of Belle Isle northeasterly to Cape Chidley at the entrance to Hudson Strait (Map: Canada, S, T, 4, 5, 6). The coast strip varies from about 10 to 50 miles in width and is indented with numerous inlets, bays, and fiords, behind groups of small rocky islands. On the Atlantic side it presents an abrupt wall of rocky cliffs from 1000 to 6000 feet in height. The climate, excepting the brief summer, is very cold and stormy; but even in winter its dryness makes it endurable and healthful. The chief inlet is the Hamilton, into which the Hamilton or Grand River empties, and whose Grand Falls (q.v.) are 302 feet high, although not equal in volume to Niagara Falls. The fisheries, especially the cod, salmon, and trout, are important. The inhabitants are mainly Eskimo in the north and Indians in the south. A few whites, mostly fishermen, are scattered along the settlements; and the Moravian Brethren, who first came in 1764, have several missions in the north. There are a few posts of the Hudson's Bay Company. The population in 1913 was 3965.

The name Labrador was long popularly applied to the whole territory bounded by the Atlantic Ocean, Hudson Strait, and Hudson Bay, which included not only the Labrador strip of coast, but also a portion of the Northwest Territories. Later the name was given to the whole peninsula lying between the Gulf of St. Lawrence and Hudson Bay. In the latter description what was once called Labrador is now, excepting the coast strip, included in the Province of Quebec. The exact boundaries of the coast strip have long been in dispute between Canada and Newfoundland, and the territory has several times changed hands. The Labrador coast was first discovered by the Northmen in the tenth century. Cabot sailed along it in 1498 and Conte-Real in 1500, but the interior was practically unexplored until traversed by officers of the Hudson's Bay Company about 1840.

Bibliography. George Cartwright, *Sixteen Years on the Coast of Labrador* (Newark, Eng, 1792); H. Y. Hind, *Explorations in the Interior of the Labrador Peninsula* (2 vols., London, 1863); A. S. Packard, *The Labrador Coast: A Journal of Two Summer Cruises to that Region, with Notes on its Early Discovery, on the Eskimo, on its Physical Geography, Geology, and Natural History* (New York, 1891); Norman Duncan, *Doctor Luke of the Labrador* (ib., 1904); id., *Dr Grenfell's Parish* (ib., 1905); Dillon Wallace, *Lure of the Labrador Wild* (ib., 1905); id., *Long Labrador Trail* (ib., 1907); N. B. H. Ellis, *A Woman's Way through Unknown Labrador* (2d ed., New York, 1908); W. T. Grenfell, *Down North on the Labrador* (ib., 1911); H. V. Hesketh-Prichard, *Through Trackless Labrador* (ib., 1911); C. W. Townsend (ed.), *Captain Cartwright and his Labrador Journal* (Boston, 1911); W. G. Gosling, *Labrador: Its Discovery, Exploration, and Development* (New York, 1911); W. B. Cabot, *In Northern Labrador* (Boston, 1912); W. T. Grenfell, *Labrador: The Country and the People*

(new ed., New York, 1913); M. L. Dwight, *Children of Labrador* (ib., 1914); Cuthbert Lee, *With Doctor Grenfell in Labrador* (ib., 1914). See UNGAVA; NEWFOUNDLAND.

LABRADOR DUCK. See DUCK.

LABRADORITE. A variety of feldspar, consisting of aluminium, calcium, and sodium silicate, that crystallizes in the triclinic system. It is commonly found in dark-gray cleavable masses. It is an essential constituent of the early rocks and is found in northern Europe and in Labrador. The cleavable varieties show a beautiful change of color, especially when polished, and are used for ornamental purposes and for table tops, snuffboxes, etc.

LABRADOR TEA. See LEDUM.

LABRIDÆ (Neo-Lat. nom. pl., from Lat. *labrum*, lip). A family of spiny-rayed fishes living mostly in the warm seas among rocks or kelp. There are 60 genera and 450 species, many of them brilliantly colored. Some of them are valuable for food; among others the tautog (q.v.) is very important. To this family belong the wrasses.

LABROUSTE, là'brōōst', HENRI PIERRE FRANÇOIS (1801-75). A French architect, born in Paris, and the brother of Théodore Labrouste (1799-1885), also an architect. He was a pupil of Vaudoyer and Lebas, and won the Grand Prix de Rome for architecture in 1824. After his return to Paris from his studies in Rome and travels in Italy, he was associated with Duban in the construction of the Ecole des Beaux-Arts. His best-known works are the Hospital at Lausanne (1831), the Library of St. Genevieve in Paris (1843-50), and the National Library in Paris (1855-75), which he partially reconstructed. In both these last-named buildings Labrouste was very successful in his use of metal for interior construction and decoration. In the buildings of the Ecole des Beaux-Arts and especially in the Library of St. Genevieve he exemplified the ideals of the so-called Néo-Grec movement, displaying a most refined taste and much originality.

LABRUNIE, là'brū'nē', GÉRARD The real name of the French novelist Gérard de Nerval (q.v.).

LA BRUYÈRE, là brū'yâr', JEAN DE (1645-96). A French essayist. He was born in Paris, Aug. 16, 1645. His father was a city officer, in easy circumstances. The son was educated for the bar and bought a fiscal office at Caen in 1673 from a relative of Bossuet, who introduced him in 1683 to the great Condé, in whose family as tutor to his grandson or at court the rest of his life was passed. The impression he made in society seems to have been slight but pleasant, as of a quiet and inoffensive observer and "fort honnête homme" (Racine). His observations are enshrined in his *Caractères* (1688), which, as had been predicted by Malezieu, brought him many readers and many enemies, for the fancy portraits hardly needed the numerous "keys" that were soon in circulation. Chief of these enemies were Thomas Corneille, Fontenelle, and Benserade, and each new edition brought them reinforcements from the newly wounded. From any downright injury Bossuet and the Prince de Bourbon defended him; but he was thrice defeated for the Academy, which he did not enter till 1693. His *Works* comprise, besides the *Caractères*, a translation of a similar work of the Greek Theophrastus, his academic *Discours*, a few *Letters*, and posthumously

printed *Dialogues sur le quétisme*, the genuineness of which has been questioned. The *Caractères*, alone of primary importance, take the ethical generalizations of Theophrastus and specialize them into "portraits"—a peculiar product of the literature of the century. His unique quality is in treating this portrait in the manner of Montaigne and with the epigrammatic incisiveness of Pascal and La Rochefoucauld, though the characters are not always both individual and typical, and the maxims seem shallow beside those of La Rochefoucauld. La Bruyère will always be prized as one of the most correct writers of classical French—rarely affected, always well-bred, never obscure, an ideal school classic. Editions (best by Servais, 3 vols., Paris, 1866-78) and translations (best by Helen Stott, London, 1890) are numerous. There were nine during La Bruyère's life, each with additions. The Quietist *Dialogues* appeared in 1698, the *Letters* not till 1867. The best edition is that of Chassang (Paris, 1876). The literature of the "keys," obscure but amusing, is well threshed in Fournier's *Comédie de La Bruyère*. Consult: Rahstede, *La Bruyère und seine Charaktere* (Oppeln, 1886); Allaire, *La Bruyère dans la maison de Condé* (Paris, 1886); Pelisson, *La Bruyère* (ib., 1893); Morillot, "La Bruyère," in *Les grands écrivains français* (ib., 1904).

LABUAN, là'bōō-ān'. An island constituting a "settlement" of the British Colony of the Straits Settlements and situated off the west coast of British North Borneo, in lat. 5° 16' N. and long. 115° 15' E. (Map East Indies, D 4). Its area is 28.6 square miles. The nearest point on the coast of Borneo is 6 miles distant; the town of Brunei, about 40 miles; and the city of Singapore, 725 miles. The average annual rainfall is about 168 inches, and the temperature varies from 71° to 93°. The surface is mountainous and the soil productive, but only about 2000 acres are under cultivation. There are rich coal deposits, but their exploitation has not met with great success. Labuan coal was exported in 1902 to the amount of 27,467 tons and, in 1910, 86,689 tons, but at the beginning of 1911 the mines were closed. A narrow-gauge railway, about 10 miles long, extends from Victoria Harbour to the coal mines; it was in 1914 closed to passenger traffic. Victoria Harbour (pop., about 1500) is a fine, safe port; vessels drawing 15 feet can go alongside the old jetties, and those drawing 23 feet alongside the outside jetty. There is a considerable transit trade, Victoria Harbour being a market for much of the produce of the neighboring coasts of Borneo and the Sulu Archipelago, such as sago, edible birds' nests, beeswax, camphor, rubber and gutta-percha, rattans, trepang, and tortoise shell. These products are sent to Singapore. When Labuan was ceded to Great Britain in 1846 by the Sultan of Brunei (in order that the British might make use of the excellent port), the island was uninhabited; the inhabitants now are chiefly Malays from Brunei and Chinese, the latter being mostly small traders. The population in 1891 was 5853 (of whom 28 Europeans); in 1901, 8411 (of whom 51 Europeans and 1615 Chinese); in 1912, 6634. From 1848 until the end of 1889 Labuan was governed as a separate crown colony; at the beginning of 1890 the administration was intrusted to the British North Borneo Company; this arrangement terminated at the beginning of 1906, when

the Governor of the Straits Settlements became Governor of the Colony of Labuan; a year later the island was annexed to the Colony of the Straits Settlements, becoming a part of the settlement of Singapore; and in December, 1912, it was constituted a separate settlement.

LABURNUM (Lat., broad-leaved bean trefoil), *Laburnum vulgare*. A small tree, a native of the Alps and other mountains of the south of Europe, much planted in shrubberies and pleasure grounds on account of its glossy foliage and its large, pendulous racemes of yellow flowers, which are produced in great abundance in May and June. It is often mixed with lilac, and when the latter preponderates, the combination has a fine effect. Under favorable circumstances laburnum sometimes attains a height of 40 feet. It is of rapid growth, yet its wood is hard, fine-grained, and very heavy, of



LABURNUM.

a dark-brown or dark-green color, and much valued for cabinetwork, inlaying, turning, knife handles, musical instruments, etc. The leaves, bark, etc., and particularly the seeds, are nauseous and poisonous, containing cytisine, an emetic, purgative, and narcotic principle, which is also found in many allied plants. Accidents to children from eating laburnum seeds are not infrequent; but to hares and rabbits laburnum is wholesome food, and they are so fond of it that the safety of other trees in a young plantation may be insured by introducing laburnum plants in great number, which spring again from the roots when eaten down. A fine variety, Scotch laburnum, by some botanists regarded as a distinct species (*Laburnum alpinum*), is distinguished by broad leaves and darker yellow flowers, which are produced later in the season than those of the common or English laburnum. These species are extensively planted as ornamental trees on account of their hardness and beauty. In America they are commonly called golden chain, or bean tree. The species formerly called *Laburnum adami*, now referred to as *Cytisus adami*, bearing both yellow and purple flowers, is met with sometimes. It is believed to be a graft hybrid of *Laburnum vulgare* and *Cytisus purpureus*, originated in France about 1826. This form is now called a pericyclic chimera, the central part of the stems being of

one and the outer part of the other plant. See CYTISUS.

LABYRINTH. The internal ear, or labyrinth, consists of the vestibule, semicircular canals, and cochlea, in the latter of which the delicate terminal filaments of the auditory nerve are distributed. The labyrinth is inclosed in a dense bony capsule which protects it under ordinary circumstances from injury or disease. It may be attacked, however, through violence, through the blood stream, and through two vulnerable points in the vestibule, viz., the oval and round windows, the former closed by the footplate of the stapes, the latter by a thin membrane only. The principal symptoms of disease of the labyrinth are extreme deafness, due to injury or destruction of the auditory nerve endings; tinnitus; and nystagmus, a spasmodic side-to-side or rotatory movement of the eyeball. Labyrinthine deafness is essentially an affection of the nerve. This may be brought on in various ways. 1. Hemorrhage into the labyrinth often accompanies fractures of the base of the skull, or the rupture of a blood vessel may depend on other forms of violence or upon disease of the vessel walls. 2. Purulent diseases of the middle ear may destroy the function of the labyrinth, either by extension through its walls or by penetrating the oval or round windows. This condition is dependent on violent inflammations of the middle ear, such as occur in scarlet fever or grippe. 3. Syphilis is a common cause both of the acute and chronic forms of internal ear disease. 4. The labyrinth may be attacked through the blood stream by metastasis (q.v.), as in mumps (q.v.). 5. Many drugs, the most notable of which is quinine, may affect temporarily or permanently the function of the nerve. Chronic auto-intoxication is also capable of producing a localized neuritis with disturbance of hearing and tinnitus. Lead poisoning and rheumatism may also be factors. 6. Rarefying osteitis of the labyrinthine capsule, resulting in fixation of the stapes, is a chronic affection, the etiology of which is not thoroughly agreed upon. 7. Arteriosclerosis with fatty degeneration and deposition of calcareous salts in the labyrinthine artery is believed by many to be the cause of progressive deafness in elderly people, but this again may be dependent on certain factors above enumerated. 8. The function of the labyrinth may be destroyed suddenly by the detonation of large cannons, or the auditory nerve may undergo gradual degeneration when subjected to long-continued traumatism such as occurs among boiler makers. 9. Labyrinthine deafness in young children is usually due to congenital defect or to cerebrospinal meningitis. The functions and various affections of the labyrinth, especially the symptom nystagmus, have been the subject, during late years, of careful investigation, particularly by the Vienna aurists, among whom may be mentioned Neumann and Barany, as a result of which the diagnosis of this class of diseases has made great advances. For anatomy of the labyrinth, see EAR.

LABYRINTH. The name of several celebrated buildings of antiquity, consisting of many chambers or passages difficult to pass through without a guide; hence the name is applied to a complicated mass of constructions. In antiquity the Egyptian, Cretan, and Samian labyrinths were famous. The name might be supposed to have an Egyptian etymology, as stated

by Diodorus (i, 61-97), but at present Greek scholars prefer to derive it from Greek *laura* (lane, i.e., a construction with many lanes). Evans was disposed to connect it with *labrys*, the Carian word for axe, from the fact that the double axe occurred so frequently at Cnosus. The Egyptian labyrinth was situated close to Lake Mæris, near the city Crocodilopolis, called in Ptolemaic times Arsinoe, not far from the modern Medinet-el-Fayum. It seems to have been the largest temple of ancient Egypt. The descriptions of the classical writers are very contradictory and give no clear idea of the construction; they agree, however, in describing the main building as a series of chambers (about 20), each roofed with a single stone slab of immense size. In front of the chambers were covered passages, with large monolithic columns, and adjoining them large courts filled with other buildings. The fondness of the Egyptians for using immense stones is said to have been specially manifest in this temple. According to a rude sketch in a hieroglyphic papyrus of Roman times, it was dedicated to Souchos (Sobk), the god of Crocodilopolis, though all the principal gods of the other Egyptian nomes were also worshiped in it. It is not improbable that Herodotus was right in saying that sacred crocodiles and some favored men were buried in the crypts of the temple, but this was not the principal purpose of the temple. A large cemetery of crocodiles existed northwest of the structure, and the founder had his tomb in a brick pyramid at the north side of the building. The name of this builder is variously given by classical writers, the best tradition being that of Manetho—that the fourth (better the sixth) King of the twelfth dynasty, Amenemês, or Amenemhat III, built the labyrinth as a tomb for himself. His name is given in Manetho as Lamarês (i.e., hieroglyphic Ne-ma(t)-rê, the official name of the king), which to the ear of the Greeks sounded like labyrinth, and which was corrupted by later writers to Menes, Mendes, Ismandes, etc. The Mæris of Herodotus is the same King. The temple, however, was not his burial place, although it probably served for the cult of the founder, who must have been associated with the gods worshiped there. (See MÆRIS.) Later the Queen Sebk-nefru (Skemiochris) seems to have built on the temple. This immense building, which was still standing in the first century A.D., has disappeared so completely that Petrie could find little more than traces of the foundations. Lepsius erroneously considered as remnants of it a few miserable ruins of brick houses erected there in late Roman times. The limestones of the temple must have been used as building material for the numerous cities and villages of the Fayum or else burned to lime.

The Cretan labyrinth, famous in Greek mythology as the abode of the Minotaur whom Theseus slew, was reputed to have been built by Dædalus. It is probable, however, that no such structure ever existed and that the myth referred to the natural fissures in the rocks near Cnosus, unless, indeed, it refers to the royal palace recently excavated in this locality. The Lemnian labyrinth was an ancient structure in the Isle of Samos, partly due to nature. Pliny used the term "Italian labyrinth" to designate the gigantic tomb of Porsenna near Clusium. Consult the classical quotations in regard to the Egyptian labyrinth which have been col-

lected in Wiedemann, *Herodots zweites Buch* (Leipzig, 1890); for the ruins, consult W. M. F. Petrie, *Hawara, Bahmu and Arsinoe* (London, 1889); H. R. Hall, "The Two Labyrinths," in *Journal of Hellenic Studies*, vol. xxv (ib., 1905); Paul Wolters, "Darstellungen des Labyrinths," in *Königliche-Bayerische Akademie der Wissenschaften, Sitzungsberichte, philosophisch-historische Klasse*, 1907 (Munich, 1907).

LABYRINTHODONT (from Gk. λαβύρινθος, *labyrinthos*, labyrinth + ὀδός, *odous*, tooth). A member of an order, Labyrinthodontia, of extinct amphibians. An extinct reptile found in rocks of Carboniferous, Permian, and Triassic age, having peculiar labyrinthine structure of the teeth. See STEGOCEPHALIA.

LAC (Pers. *lak*, Hind. *lakh*, from Skt. *lākṣā*, lac insect, from *lakṣa*, hundred thousand; so called from the great numbers of the insect in a single nest). The general name under which the various products of the lac insect (*Coccus lacca*) are known. The insects live upon the twigs of certain trees and soon become covered with a secretion, from certain pores, which increases in thickness, protecting the body and the eggs, and which constitutes the lac of commerce. It is said that to each of the males there are at least 5000 females, and the winged males are at least twice as large as the females. When a colony, consisting of a few adult females and one or two males, find their way to a new branch, they attach themselves to the bark, and, having pierced it with holes, through which they draw up the resinous juices upon which they feed, they become fixed or glued by the superfluous excretion, and after a time die, forming by their dead bodies little domes or tents over the myriads of minute eggs which they have laid. In a short time the eggs burst into life, and the young, which are very minute, swarm all over the twig or small young branch of the tree in such countless numbers as to give it the appearance of being covered with a blood-red dust. They soon spread to all parts of the tree where the bark is tender enough to afford them food, and generation after generation dwells upon the same twig until it is enveloped in a coating, often half an inch in thickness, of the resinous exudation, which is very cellular throughout, the cells being the casts of the bodies of the dead females. During their lifetime they secrete a beautiful purple coloring matter, which does not perish with them, but remains shut up in the cells with the other results of decomposition.

In districts like the Province of Assam, in northern India, where the gathering of lac is an important industry, the natives do not depend upon the natural crop, but regulate and increase the amount by cultivation. Two crops are gathered each year—one in May or June and the other six months later. The first is gathered principally for seed purposes, and the second for commerce. The twigs gathered at the first harvest from the tree covered with live insects still in the larval stage, and called *stick lac*, are tied on to the fresh trees; or the stick lac is placed in little bamboo baskets, which are fastened to the trees. Soon the insects crawl out of the twigs, fasten on to the branches, and the resinous formation begins. It is stated that usually a tree, after furnishing food for the lac insect for three or four years, requires a rest, although some trees will produce lac for 12 years and continue to thrive. The trees best

suited to the insects are such as are only moderately vigorous.

The principal lac-producing trees are several species of *Ficus*, including the *Ficus religiosa*, or religious tree of the Hindus; the *Cajanus indicus*, *Palas*, *Kusum*, and some other trees which are natives of India, China, and Japan.

The usual method of separating the resinous matter from the dye and other contents of the stick lac is as follows: The covered twigs are broken up or coarsely pulverized, and placed in hot water, which melts the resinous matter, liberates the pieces of wood and the remains of the insects, and also dissolves the coloring matter. This is facilitated by kneading the melted resin while in the hot water; it is then taken out and dried. The process of washing and drying is repeated a number of times until the resin is well separated from the coloring matter. The resin is then put into strong and very coarse cotton bags, which are held near enough to charcoal fires to melt the resin without burning the bags. By twisting the bags the melted resin is then forced through the fabric and received in thin curtain-like films upon strips of wood. This hardens as its surface becomes acted upon by the air and, being broken off in fragments, constitutes the shellac of commerce. The best shellac is that which is most completely freed from impurities and approaches most to a light orange-brown color. If the coloring matter has not been well washed out, the resin is often very dark. Much that is squeezed through the bags falls to the ground, without touching the sticks placed to catch it; small quantities falling form button-like drops which constitute the *button lac*; while larger ones, from 1 inch to 2 or 3 inches in diameter, constitute the *plate lac* of commerce.

Below the lac-bearing trees there is always a very considerable quantity of the resin in small particles, which have been detached by the wind shaking and chafing the branches; this also is collected, and constitutes the *seed lac* of merchants. The name of *seed lac* is also applied to the resin after it has been freed from coloring matter and is ready to be fused. See "Lac Industry of Assam," in *Journal of the Society of Fine Arts*, Feb. 8, 1901.

The water in which the stick lac is first softened contains, as before mentioned, the coloring matter of the dead insect. This is strained and evaporated until the residue is a purple sediment, which, when sufficiently dried, is cut in small cakes about 2 inches square, and stamped with certain trademarks, indicating its quality. These are then fully dried, and packed for sale as *lac dye*.

Another method of separating the resin from the dye consists in passing the twigs through crushing rollers. The powdered matter, mixed with water, is put into a stirring cylinder, where resinous and coloring matters are separated. The coloring matter is precipitated from the water by the addition of lime. The water is then drawn off and the precipitate strained and pressed into cakes which are dried in the sun. The resin is fused in closed vessels by steam heat, drawn off into a shallow trough, and then spread on hollow zinc columns, filled with warm water, which extend from the trough at an angle of 45°. Here the shellac rapidly congeals, assuming a leather-like texture. While still hot, it is removed and after drying and cooling is ready to be packed and shipped.

The shellac of commerce varies in appearance, according to the thoroughness with which it was separated from the coloring matter, from a dark red brown, called *ruby shellac*, to a pale gold, called *blonde shellac*. *White shellac* is shellac which has been bleached with chlorine. The process is a delicate one, and the product is likely to deteriorate.

The great value of the lacs is found in their adaptability for the manufacture of varnishes, both in consequence of their easy solubility and also because of the fine, hard coating, susceptible of high polish, which they give when dry.

All the varieties of lac are translucent, and some of the finer kinds, which are in flakes not much thicker than writing paper, are quite transparent. If a quantity of shellac be softened by heat, it may, by continually drawing it out into lengths and twisting it, be made not only quite white, but also opaque; in this state it has a beautiful silky lustre, and if melted and mixed with vermilion, or any other coloring matter, it forms some of the fancy kinds of sealing wax. The more usual kinds are, however, made by merely melting shellac with a little turpentine and camphor and mixing the coloring matter. Shellac has the property of being less brittle after the first melting than after subsequent meltings, hence the sealing wax manufactured in India has always had a high reputation, and hence also the extreme beauty and durability of those Chinese works of art in lac, some of which are very ancient. These are usually chowchow boxes, tea basins, or other small objects made in wood or metal, and covered over with a crust of lac, colored with vermilion, which, while soft, is molded into beautiful patterns. In India lac is used as a coating for wooden toys, and many articles of personal adornment are made from it. It is also used as a cement and by goldsmiths as a filling for hollow ornaments.

In 1914, 16,719,756 pounds of shellac, valued at \$2,689,269, were imported into the United States. This was less than in 1913, when the imports aggregated 21,912,015 pounds, valued at \$3,046,919.

LAC (Hind. *lak*, *lakh*, *lākh*, from *Skt lakṣa*, hundred thousand) In the East Indies, a word signifying a sum of 100,000 rupees. One hundred lacs, or 10,000,000 rupees, make a *crore*.

LACAILLE, lă'kî'y', NICOLAS LOUIS DE (1713-62) A French astronomer, born at Rumigny. He was a protégé of the Duke de Bourbon and under his patronage became connected with the scientists Cassini and Maraldi and later was actively engaged in meridional measurements in France. He was elected to the Academy in 1741, and about the same time professor of mathematics at the Collège Mazarin, where he established an observatory in 1746. His *Leçons élémentaires de mathématique* (1741), *Leçons de mécanique* (1743), *Leçons élémentaires d'astronomie géométrique et physique* (1746; 5th ed., 1780), and *Leçons élémentaires d'optique* (1750) were composed for the use of the students there. From 1750 until 1754 he was in charge of an astronomical expedition at the Cape of Good Hope, where he made many valuable discoveries among the southern stars and constellations. His other works include *Astronomiæ Fundamenta* (1757), *Tabulæ Solares* (1758), *Cælum Australe Stelliferum* (1763), and some *Tables de logarithmes* (1760; 4th ed., 1804). His *Journal historique*

du voyage fait au cap de Bonne-Espérance was published in 1763.

LA CALPRENÈDE, là kâl'pre-nèd', GAUTIER DE COSTES DE (1610-63). A prominent French novelist of the seventeenth century, born at the Château de Tolgon, near Cahors, in Quercy. In his youth La Calprenède appears as a frank, free, overbold gallant, an officer of the Guards, then royal chamberlain. From this function he withdrew on making a rich but not congenial marriage with a noted bluestocking, herself an author and president of a literary salon. La Calprenède wrote 10 plays and three novels, in 29 volumes of over 500 pages each. The plays are in the style of Corneille and would be conspicuous were they not outshone by such masterpieces. The best of them are: *La mort de Mithridate* (1637); *Bradamante* (1637); *Jeanne d'Angleterre* (1637); *Le comte d'Essex* (1639). *Edouard, roi d'Angleterre* (1640). *Cassandre*, the first of his novels, was published during the years 1640-43, in 10 volumes. Its popularity was such that the first volumes were twice reprinted before the completion of the last, and the whole reprinted twice during La Calprenède's life (1650-54). It was again printed in 1731 and condensed into three volumes in 1752. This novel is interesting because it shows that La Calprenède was well acquainted with the romances of chivalry as well as with Greek novels. *Cassandre* was followed by *Cléopâtre* (1647) in 12 volumes (begun in 1647), and this by *Faramond, histoire de France* (begun in 1661), which La Calprenède left unfinished at its seventh volume. Five more volumes were added by Pierre de Vaumorière. All these purport to be historical novels. *Faramond* has also the interest of being the first attempt at a novel of national history. La Calprenède is the first French novelist who had a conscious and defined plan in writing. *Cassandre* was rendered into German, Italian, and Dutch. In England *Cléopâtre* was the favorite, yet three English dramas are based on *Faramond*. If priority be taken into account, La Calprenède is the most significant, if not the best, of the idealist novelists of the century. Consult Körtling, *Geschichte des französischen Romans im XVIIIten Jahrhundert*, vol. 1 (Oppeln, 1891), and H. W. Hill, *La Calprenède's Romances and the Restoration Drama* (Chicago, 1911).

LACANDON, là'kân-dôn'. One of a tribe of Mayan stock (q.v.), formerly occupying a considerable territory upon the Lacandon and Usumacinta rivers of Chiapas (Mexico) and Guatemala, but now confined to the more inaccessible region at the head of the former stream in a region of dense forests. Their language is a dialect of the standard Maya of Yucatan. For a long time they maintained an aggressive resistance to the Spanish power and still retain a large measure of independence, with many of their ancient customs and religious rites, avoiding contact with the white man so far as possible, although nominally subject to Guatemala. The stories formerly current of large aboriginal cities and great temples still extant in their territory are now known to have been false. The Lacandones hold the ancient ruins sacred and still burn incense in the temples. They practice weaving and pottery making and are very skillful at shooting fish with stone-tipped arrows. They number less than 300, widely scattered through the jungle in small family groups. Consult A. M. Tozzer, "Comparative

Study of the Mayas and Lacandones," in *Archæological Institute of America, Report, 1902-05* (New York, 1907).

LACAZE-DUTHIERS, là'káz-du'tyā', HENRI DE (1821-1901). A French comparative zoölogist, author of a series of elaborate and richly illustrated memoirs on mollusks, parasitic crustacea, and the red coral. He was born at Montpezat, was appointed in 1865 to the chair of zoölogy at the Museum of Natural History, and three years later he was called to the Sorbonne. Elected a member of the Academy of Sciences in 1871, he afterward became its president. He was founder of the marine zoölogical laboratories of Roscoff and of Banyuls-sur-Mer, on the Mediterranean, and he founded (1873) and edited *Archives de la zoologie expérimentale*. During the last 30 years of his life he was the animating spirit of French zoölogy.

LACCADIVES, lāk'kā-divz (Skt. *Lakṣa Dvīpa*, hundred thousand islands). A group of small coral islands in the Arabian Sea, about 200 miles west of the Malabar coast of the Presidency of Madras (Map: India, B 7). Of coral formation, they are low and flat and mostly barren, and but few of them are inhabited. Pop., 1901, 10,274, 1911, 10,600, consisting chiefly of Moplahs, people of mixed Arabian and Hindu descent, professing Mohammedanism. The islands are divided into two groups—the northern, or Amandivi Islands, belonging to the Madras district of South Kanara; the southern, or Cannanore, being administered by the collector of Malabar. The chief product is coconuts, the fibre of which is almost the only article of export. As the numerous coral reefs in the vicinity of these islands make navigation dangerous, the commerce is carried on almost exclusively in native vessels, manned by the daring sailors of the islands.

LAC'COLITE, or **LAC'COLITH** (from Gk *λάκκος*, *lakkos*, pit + *λίθος*, *lithos*, stone). A mass of intrusive rock (see ROCK) having the general shape of a mushroom and supposed to be formed as the result of molten rock material being forced up from below through a fissure or crevice until, by taking a new direction along more nearly horizontal planes of bedding, it forces the overlying beds upward into a dome. Laccolites constitute a variety of batholite (q.v.) or boss. They were first described from the Henry Mountains of Utah, where the erosive agencies of the atmosphere have removed the inclosing arched roof of sedimentary strata and revealed the igneous core of the laccolite. Laccolites have since been described from many other localities, the best known, however, being in the western United States. For illustration, see GEOLOGY.

LAC DU BOURGET. See BOURGET, LAC DU.

LACE (ME. *las*, Fr. *lacs*, OF. *laz*, It. *laccio*, Sp. *lazo*, Portug. *laco*, Eng. *lasso*, Lat. *laqueus*, all meaning 'noose'; equivalent to *lace* as used in this article, are Fr. *dentelle*, *guipure*, *point*, Ger. *Spitzen*, *Kanten*, Dutch *Kant*, Sp. *encaje*, It. *trina*, *merletto*, *punto*, *pizzo*, ML. *opus reticulatum et denticulatum*; interesting to compare with the Fr. *lacs* are its diminutive *lacet*, cord, and *lakis*, network). Decorative openwork of threads, usually linen or cotton, but sometimes of silk or aloe fibres. The word developed this sense in the sixteenth century, before which it was restricted to shoe, corset waist, and sleeve laces, and to the gold and other fancy braids used in trimming hats and clothes.

HAND LACE

Probably the earliest use of the word was in an ancient rule for English nuns dating from 1210, which, modernized in form and abbreviated, reads: "Make no purses or lace (laz), but shape and sew and mend church clothes and poor men's clothes." A clear idea of the *braid* meaning of the word in the fifteenth century can be had from the directions given in an Harleian manuscript dating from 1471, for making "lace Bascon, lace indented, lace bordered, lace covert, a brode lace, a round lace, a thynne lace, an open lace, lace for hattys," etc. The illuminated initial letter shows a woman busy making such lace. As is explained in the text, threads in combinations of two, four, five, up to 10 and 15, are twisted and plaited together. No pillow, bobbins, or pins are used. Instead the fingers serve as pegs, upon each of which is placed a ball of thread. The fingers are lettered, the first finger being called A, the second B, and so on. A "thynne" lace can be made with only three threads, requiring the use of only three fingers, A, B, and C, on one hand. By occasionally dropping some of the threads, braid with openwork or with indented edge is produced. For very broad laces the fingers of assistants must also be used. The most ancient specimens of lace in existence are knotted hair nets and breast nets from the tombs of Thebes and other parts of Egypt—some dating from as far back as 2500 B.C., and some not only made with loose tassels and meshes in ornamental groups, but also adorned with heads and tiny porcelain figures strung among the meshes. Also from the tombs of Egypt come the Coptic (Roman-Egyptian) laces dating from the third to the seventh century A.D. Some of these are bobbin laces; others are embroidered warp laces. Mrs. Pollen (see *Bibliography*, below) in her illustrated folio volume illustrates examples of both. The bobbin lace illustrated by her resembles torchon, was unearthed in 1903, and is now in the Cluny Museum. The bobbins were found with it. It was probably made, not on a lace pillow, but on a wooden frame, with pegs to hold the threads apart. An interesting example of Coptic lace net for the hair is the coil in the Poldi-Pezzoli Museum, Milan, illustrated by Ricci, also included in this work.

The oldest large pieces of lace in existence are on two albs, the first of which, still preserved in Assisi, is said to have been woven and ornamented by St. Clare and her nuns and to have been worn by St. Francis of Assisi (1181-1226). The lace is a fundamental part of the linen robe, being drawn work, a polygon made up of squares containing gammadions (swastikas) and other derivatives of the cross. Mrs. Pollen regards the design and technique as showing traces of Coptic origin. The other alb is said to have been worn in 1298 by Pope Boniface VIII and is preserved in the treasury of the Sistine Chapel in the Vatican. The linen of which it is made is crisp and wiry, though much worn, resembling, not Italian linen, but that of Egypt, the *linum usitatissimum*, called in early Christian times *byssus* of *Alexandria*. The linen of this alb is slightly finer than that of the Assisi alb and is heavily adorned with lace of an Oriental character. The rosettes symmetrically grouped in squares are needlework in *punto a rammendo*, and the curious *punto treccia* (tress work) is introduced as well

as the *punto a stuora* (matting stitch). But in this as well as other very early lace the *punto a festone* (buttonhole stitch) does not appear, although afterward it came to be almost the only stitch used in needle lace, until the advent of the *réseau* (looped mesh). In the alb of Pope Boniface the lace was inserted in squares, the surrounding linen cloth being developed into rows of drawn work. The flounce and insertions of bobbin lace were added at a later date.

Painted evidence of the ecclesiastical use of lace at the beginning of the fourteenth century is afforded by the fresco of Giotto (1276-1337) in St. John Lateran, where one of the two priests supporting Boniface VIII wears an alb with lace on the sleeve; by Giotto's "St. John the Baptist" in the Louvre, with lace on the bed linen and the long towel; by Giotto's fresco in the basilica of Assisi, where the shirt of the Christ Child is adorned with reticella lace.

However, even if the Assisi and the Pope Boniface albs are as ancient as claimed, it is certain that the amount of lace worn either by ecclesiastics or laity previous to the sixteenth century was comparatively small, and that the development of needle lace and bobbin lace, made without using warp or web or net, did not take place until then. Only then does lace begin to appear frequently in paintings and in illustrations of manuscripts and books. From the middle of the sixteenth century well into the eighteenth is the age of lace as an article of personal adornment for both gentlemen and ladies. But of course the amount of lace worn now, though less conspicuously, since the invention, and enormous development in recent years, of inexpensive power-machine laces, is thousands of times greater than ever before, while the use of all-lace curtains that became practicable only with the development of machine net has within the past 25 years become common in the United States, Great Britain, and France, and not uncommon in Germany and Italy.

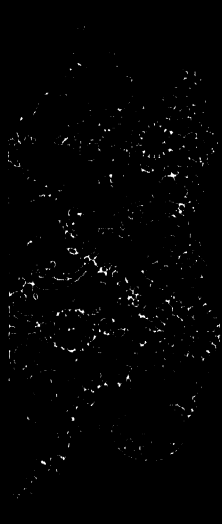
The primitive origin of lace is from nets and embroidered warps or knotted fringes. Lace nets are finer and more decorative than fish nets or hunting nets and are used to adorn the body or drape the home. Embroidered warp laces are those made, like the ancient Coptic and Peruvian and some of the early Italian ones, by omitting the weft from a section or sections of a cloth on the loom or weaving frame, and then with needle or bobbin working a lace pattern on the warps thus left exposed. Another way of getting exposed warps to use as a foundation was to pull out some of the wefts. This is *drawn work*. Still another way of getting lace into the body of a fabric was to cut out sections of the fabric, edging the small openings with embroidery and filling in the large ones with needle lace. This is *cutwork*. As a basis for lacework figured by darning or filling in with the needle, square-mesh knotted net was also used. This is *filet italien*, called *laci* or *filet brodé* by the French and *modano* by the Italians. Another basis for similar lacework was *buratto*, or bolting cloth, coarse and open like a sieve. Lace fringes were made by knotting warps left unwoven at the ends of a cloth. This is *macramé* lace. All of these laces date from before the Renaissance. Other laces are made by *knitting*, *crocheting*, and *tatting*. (See *KNITTING*.) Crocheting is looping done with a crochet hook, and tatting

LACE

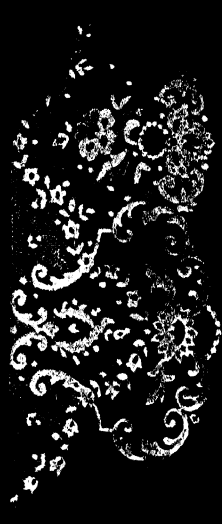
1



4



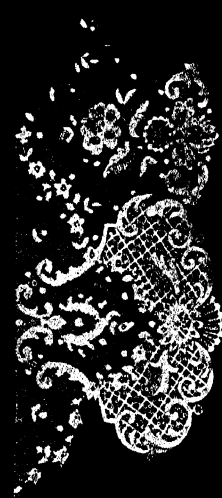
7



5



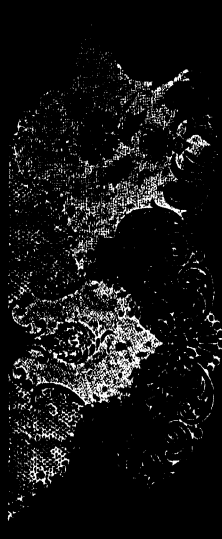
8



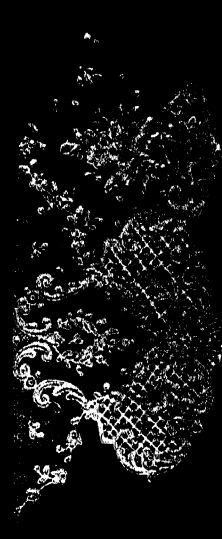
3



6

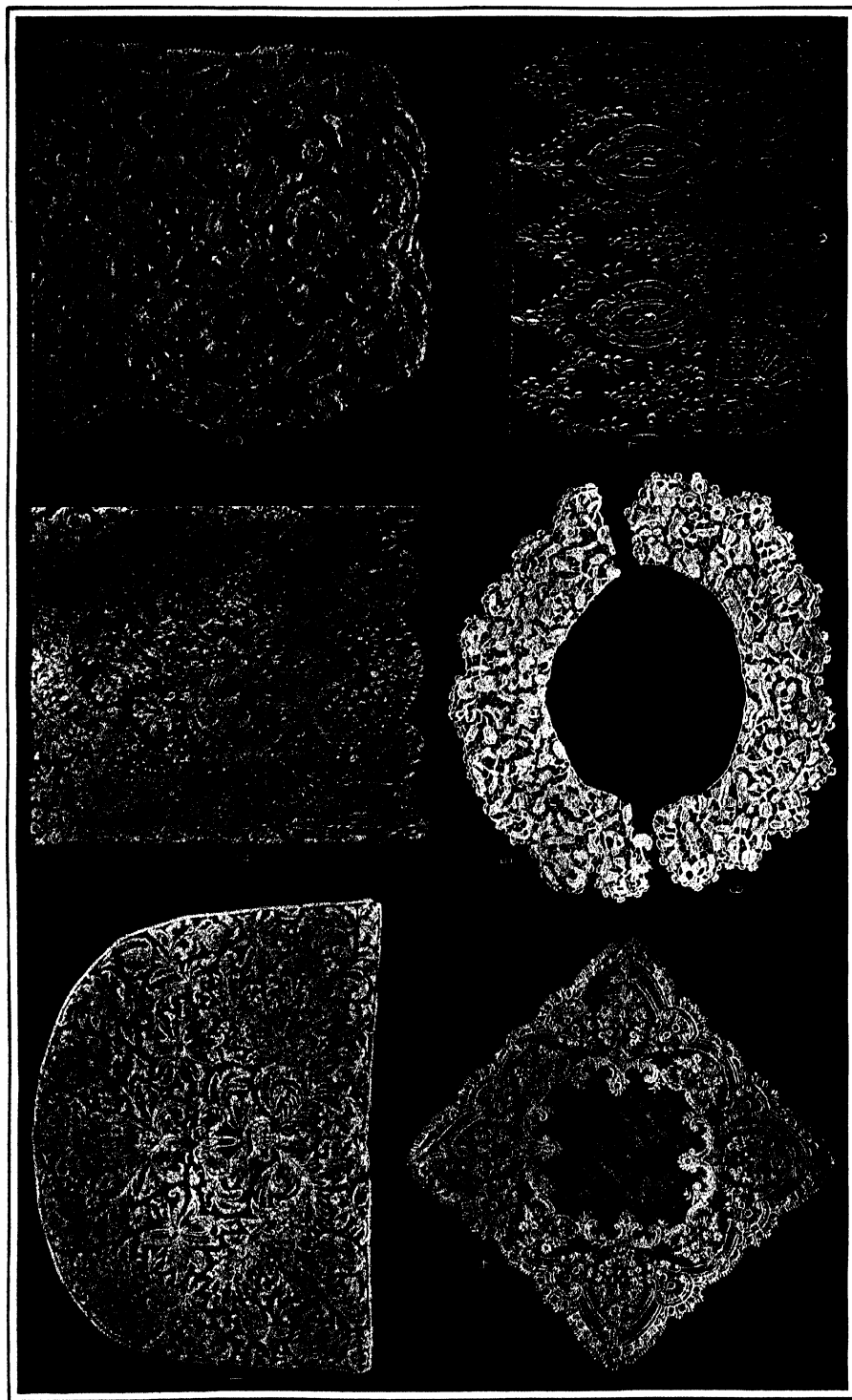


9



SUCCESSIVE STEPS IN THE MAKING OF POINT D'ALENÇON LACE
From the Metropolitan Museum of Art, New York
(See Explanation and Description in Text)

LACE



- LACES FROM THE METROPOLITAN MUSEUM OF ART, NEW YORK
- 1. English Antique
 - 2. Italian
 - 3. Flemish Antique
 - 4. English Modern
 - 5. Irish Modern
 - 6. Brussels Antique
 - 7. Brussels Modern

is knotted lace made with a tatting shuttle. But the laces par excellence, and those that most appeal to the imagination as derived from the delicate and wonderfully beautiful laces of the spider and caterpillar, are made with needle or bobbin and without any cloth or net or warp ground to start with. These are the laces the development of which in the sixteenth century brought fame and fortune to lace makers and established the art as one of the great decorative arts.

Here it is well to remark that the attempt to make point lace a synonym of needle lace or of needle-point lace is a gross error. Point means bobbin lace (sometimes called pillow lace from the pillow on which much of it is made) just as much as it means needle lace. In other words, point is a general word for lace in English as well as in French and Italian (*punto*). General terms that cover all laces, machine as well as hand, are *sewed laces* and *woven laces*—the former including all laces made with the needle and the latter all laces made in any other way. Laces made on embroidery machines class, of course, with sewed laces, those made on the Leavers machine or the lace-curtain machine or the dentellière with woven laces.

Needle lace of the *punto in aria* type is worked on loose threads that have no coherency until the needlework binds them together. This needlework is executed with a single thread. First the pattern is drawn, usually on parchment. A piece of heavy linen is sewed to the parchment to hold it straight. The threads in groups of two, three, four, or more are laid along the main lines of the pattern and basted down through parchment and linen.

The entire pattern is then executed, in five stitches, the buttonhole stitch being much used except for the net ground. The accompanying plate shows how Alençon lace is made, the different classes of work being assigned to different workers successively, each an expert in her particular part. Fig. 1 shows the design, which is drawn on white paper. It is then pricked with a needle on a piece of green parchment on which the grounding is indicated (Fig. 2). A colored design in which the portions to be worked out by the different workers are indicated is next employed and is shown in Fig. 3. The first worker traces out the design on the parchment (*la trace*) as shown in Fig. 4. The next supplies the coarser groundwork (*bride*), indicated on the color scheme by yellow and shown in Fig. 5. Next the finer grounding (*réseau*), which corresponds in the color plan to the green, is worked in, and then the design itself is worked in solid buttonhole stitch (*rempli*). This is indicated by the white on the color plan. Next the fine stars of the openwork (*modes*) are added, corresponding to the red on the diagram, and the final process consists in working a heavy outline around the design, as is indicated by the black. Fig. 9 shows the finished lace after it has gone through these successive stages.

Bobbin lace is made from a large number of threads attached by pins to an oval cushion or pillow, each thread being wound on a small bobbin. The design, as in needle lace, is drawn on stiff paper or parchment, which is carefully stretched over the pillow and pricked out along the main lines. Then small pins are inserted at close intervals, around which the threads turn to form the various meshes and other openings.

The thread on the bobbins is lightly wound and tied at the top in a loop that slips easily when the bobbin is needed. The plaiting or weaving is exceedingly intricate, but the bobbins are passed over and under each other with remarkable rapidity and accuracy. The laces are usually made, not in large pieces that would require a huge cushion and a bewildering number of pins and bobbins, but in separate motifs that are joined together afterward.

The early pattern books indicate not only that early needle-lace designs are based on embroidery designs, but also that they are Venetian. They first appear definitely in *Il Burato*, published about 1527, and continued their career in the pages of Tagherite and Zoppino, until in Mathio Pagan's book, published in 1543, we find *punto tagliato* (cutwork), which is nothing more or less than *reticella* lace. The novelty of this lace depends upon the *tagliato*. The linen not only has threads drawn, but it is also cut. The process is splendidly illustrated by a piece of reticella lace in the Palermo Museum that has lain unfinished since the sixteenth century (Plate 102 of vol. i of Ricci; see *Bibliography*). The main lines that border the cut squares are in threads left undrawn and covered with matting stitch, and the squares themselves are filled in with needle lace, at first consisting of triangles in buttonhole stitch, attached by the three corners to the linen or to crossbars, and with brides to lighten the general effect. Later, openwork squares, wheels, and picots were introduced, and before long flowers, foliage, animals, and personages. Reticella lace has often been called by the various names of Gothic, Greek, Venetian, Spanish.

Punto in aria (point in air) is made with the needle out of thread only, without warp or net or web to start with. It comes in logical and historical sequence after reticella lace, from which it is derived. It is needle lace par excellence.

Italian bobbin lace is the younger sister of Italian needle lace, and while all the Italian needle laces, except Sicilian drawn work, are of Venetian origin, there are pillow laces from Genoa, Milan, and the Abruzzi as well as from Venice. In character they are decidedly more popular and more provincial and have less individuality than the aristocratic needle laces. But while bobbin laces lack the accuracy of design, the interesting relief, and the delicate perfection of needle laces, they are both softer and stronger. That the making of bobbin laces was well established in Venice before the middle of the sixteenth century is clear from the preface to Froschower's book of designs for bobbin lace, published in Zurich in 1560. He says: "Among the divers arts invented and practiced for the good of humanity, ought justly to be mentioned the Art of Bobbin-lace, which arose in our country about 25 years ago and quickly became common amongst us. It was imported into Germany from Italy for the first time by Venetian merchants in 1536." This would seem to settle definitely the claim of Barbara Uttmann to be regarded as the inventor of bobbin lace, despite the fact that in 1834 a monument was erected to her in Annaberg, in the Harz Mountains, Germany, bearing the inscription "inventor in 1567 of bobbin lace, which made her the benefactress of the neighborhood."

One reason for the rapid development of bob-

bin lace, i.e., its cheapness, is brought out by Froschower, who says: "When, years ago, cut-work and relief work were much in vogue, there is no telling how much time was taken in making a collar or bib or anything of the sort, joined to heavy expense to the person by whom it was ordered. On the contrary now, a bobbin lace may be acquired for little money and applied in little time, so that the cost is much less. Formerly, too, collars and other articles were adorned with cords of gold and colored silk, occasioning vast expense for soap and cleaning; now the work is done much more expeditiously because all these things are made of linen that is not injured by lye."

A primitive lace that deserves especial notice because of its revival in recent years in both hand and machine forms is *filet italien*. (See above.) Anciently it was called *lacs* in English as well as French, one of the "laureate" Skelton's verses (1460-1529) reading:

"The sampler to sew on, the lacs to embrand."

In a painting (1488) by Lorenzo Costa, at San Giacomo in Bologna, the square openings of the robes of the three personages are filled in with lacs. The most influential and famous designer for both lacs and reticella was Vinciolo, the first edition of whose work was published in Paris in 1587 under the title *Les singuliers et nouveaux pourtraicts et ouvrages de l'ingerie*. There are a number of ancient specimens of lace extant after Vinciolo's designs, notably a bedspread in the Victoria and Albert Museum, composed of squares picturing the months of the year, male and female heads, figures and groups. In early Italian lacs (modano) the designs are classic renaissance with figures and foliage of the type called grotesque after the underground caverns from which the ancient Roman frescoes and mural ornament were excavated. In German lacs eagles and heraldic emblems, oak leaves, acorns, thistles, and hunting scenes predominate.

Towards the end of the sixteenth century Flemish paintings and drawings begin to show the use of Flemish bobbin lace, and during the seventeenth century an immense quantity of it was produced in Flanders. The industry here was much helped by the superior quality of Flemish linen, "fyner than any other part of Europe yealdeth." The designs were apt to be crowded, and composed of bold scrolling tapes, called *guipure de Flandres* when the motifs were joined with *brides à picots*, and *point d'Angleterre* when the ground consisted of fine net. Hardly any needle lace was made in Flanders before 1720, when Brussels began to produce an imitation of Alençon lace, but less firm and precise and with looser toil than the French work. Some of the thread used is so fine that it has to be spun underground in damp air to keep it from breaking. Much of the Brussels eighteenth-century work is extremely naturalistic, and at the court of Louis XV it was popular, being sometimes preferred to Alençon. The designs were uniformly French in character, with the Chinese influence strong, as in French decorative art of the first half of the eighteenth century. Other Flemish cities famous for lace are Bruges, Mechlin (Malines), Valenciennes, Lille, and Arras, the last three of which became French by conquest and treaty in the seventeenth century.

In the reign of Louis XIV Paris became the

centre of style. Art industries of every kind were established and encouraged by Colbert, among them tapestries at the Gobelins and needle lace at Alençon. A company was formed Aug. 15, 1665, with the exclusive privilege for 10 years of making *points de France* (French lace). On Nov. 17, 1667, was published a special prohibition against selling or wearing "passements, lace, and other works in thread of Venice, Genoa, and other foreign countries." The French were so determined to promote and protect the home industry that in 1670, wrote an Englishman then traveling in France, "there was publicly burnt by the hangman a hundred thousand crowns worth of point de Venice, Flanders lace, and other foreign commodities that are forbid." By 1673 Colbert, in acknowledging the receipt from the French Ambassador to Venice of a point collar in high relief, was able to write that "those made in France are quite as fine."

The lace industry of Honiton, England, is supposed to have been founded by Flemish refugees escaping from the persecutions (1568-77) of the Duke of Alva, and names undoubtedly of Flemish origin occur at Honiton, Colyton, and Ottery St. Mary. That bobbin lace was made here in the reign of James I is shown by the inscription on the gravestone of "James Hodge, *Bonelace siller*," and by Westcote's mention of it in 1620. A petition submitted to the House of Commons in 1698 asserts that "the English are now arrived to make as good lace in fineness and all other respects as any that is wrought in Flanders." However, the petition adds: "The Flemish send it to Holland, Germany, Sweden, Denmark, France, Spain, Portugal, etc., whereas we made it chiefly to serve our own country and plantations." The chief centres of production of modern handmade laces are France and Belgium, England and Ireland, and Italy. The industry was inaugurated in Ireland about 1870 and revived in Italy at Burano (a suburb of Venice) about a few years later.

MACHINE LACE

The *first lace machine* was based on Lee's stocking machine (see KNITTING), as modified by Strutt and Frost to produce in 1764 a web with interstices, otherwise net. By 1769 Frost was able to make figured net and by 1777 net with square meshes that were fast. The *second lace machine* is the warp frame, so called because it employed a set of warp threads for each of which there was an individual needle looping its thread first to the right and then to the left and back again. By 1795 this machine was producing plain net and soon afterward figured lace in an almost endless variety of meshes and patterns. The *third lace machine*, brought to perfection by constant improvement during the past century, is the so-called Leavers machine, developed by John Heathcoat (1809) and John Leavers (1813). The application to the Leavers machine of the Jacquard attachment vastly increased the range and intricacy of patterns possible, and the operation by water and later by steam power vastly increased the speed and the quantity produced. In the Leavers machine warp threads and bobbin threads are used, sometimes more than 9000, making 60 pieces of lace at once, each piece requiring 100 warp and 48 hobbin threads. The warp threads are stretched perpendicularly, just far enough apart to admit

the passage between, edgewise, of a 25-cent piece. The bobbins are very thin and flat, so that they pass without difficulty. Ingenious mechanism varies the tension of warp and bobbin threads as desirable. As the bobbins swing like pendulums through the warp threads, they are made to vacillate and twist around the warps, the twistings being compressed by combs. If the bobbin threads are made tight and the warp threads loose, the warps will twist on the bobbin threads, and vice versa.

The kinds of embroidery machines used in making machine laces are: (1) the *bounaz machine*, a sewing machine that leaves a trail of V's on net or cloth, thus producing Swiss laces and lace curtains, (2) the *hand-embroidery machine*, that multiplies automatically the work of the operator who executes the master pattern; (3) the *schiffle* or *power embroidery machine*, that works with shuttle as well as needle and has an output many times larger than that of the hand machine. The *schiffle* machine, though of delicate and complicated construction, easily getting out of order, is indispensable for the cheap production of low and medium grades of embroidery and lace. On these two embroidery machines are made the world's imitation guipure laces, such as *point de venise*, *rose point*, *point de genes*, etc. The centre of the branch of the lace industry is Plauen in Germany. Nottingham in England and Calais in France are the centres of the production of woven laces, the French nets being particularly fine. In the production of lace curtains woven in one piece (the so-called Nottinghams), the United States is coming rapidly to the front, as well as in other branches of the machine-lace industry. The production of machine laces and lace curtains in the United States increased from \$3,585,138 in 1899 to \$7,203,422 in 1904 and to \$8,922,082 in 1909, not including about one-ninth as much more made by manufacturers primarily engaged in making carpets and rugs.

Bibliography. Mrs. Bury Palliser, *History of Lace*, often cited as the ultimate authority, the third edition of which was published in 1875, should be consulted cautiously, as it contains a mass of confused information and misinformation, even in the fourth edition, revised, with the addition of many important illustrations, by Jourdain and Dryden (London, 1902). A scholarly work, elaborately illustrated with laces, most of which are in the Imperial Austrian Art Industrial Museum, is Dr. Moritz Dreger, *Entwicklungs-geschichte der Spitze* (Vienna, 1901). Mrs. J. H. Pollen, *Seven Centuries of Lace* (London, 1908), is a folio volume with invaluable illustrations of precious laces that are well described. The standard work on Italian laces is Elisa Ricci, *Antiche trine italiane*, in two huge folio volumes superbly illustrated, with authoritative text (Bergamo, 1908, 1911). The American edition, entitled *Old Italian Lace* (Philadelphia, 1913), is useless as far as the text is concerned because badly translated. A small but valuable book on French laces is Ernest Lefebvre, *Les points de France*, translated by M. T. Johnson (New York, 1912) and well illustrated. An exhaustive work on Alençon laces is by G. Despierres, *Histoire du point alençon* (Paris, 1886). The history of English machine laces is told by William Felkin in his *Hosery and Lace* (London, 1876). On lace curtains G. L. Hunter has an important chapter in his *Home Furnishings* (New York, 1913). A convenient handbook

is F. Nevill Jackson's *Hand-Made Lace* (London, 1900). Another and better one is M. Jourdain's *Old Lace* (ib., 1909). Books showing how to make lace are: L. A. Tebbs, *Bobbin Lace* (London, 1907); Mincoff and Marriage, *Pillow Lace* (ib., 1907); Carita, *Lacis* (ib., 1909). Convenient and well illustrated is the little *Lace Dictionary* by C. R. Clifford (New York, 1913).

LACE/BARK' TREE (*Lagetta lintearia*). A lofty tree of the family Thymelaeaceae, native of the West Indies, with ovate, entire, smooth leaves and white flowers. It is remarkable for the tenacity of the fibres of its inner bark, which may be separated after maceration in water into layers resembling coarse lace. A Governor of Jamaica is said to have presented a cravat, frill, and ruffles made of it to Charles II. It is also used in making ropes, whips, etc. The plant is sometimes grown in greenhouses as a curiosity.

LACE BUG. A bug of the family Tingitidae. The wings and body are covered by a lacelike meshwork of fine lines. These bugs feed upon the juices of plants, clustering usually upon the leaves. Their eggs are fastened to the leaves by a brown sticky substance. *Corythuca arcuata* is especially abundant on hawthorn trees and *Corythuca ciliata* on the sycamore.

LACÉDEMON, lās'ē-dēmōn (Lat., from Gk. Λακεδαίμων, *Lakedaimōn*). The ancient name of Laconia, sometimes applied to Sparta (q.v.).

LA CEIBA. See CEIBA.

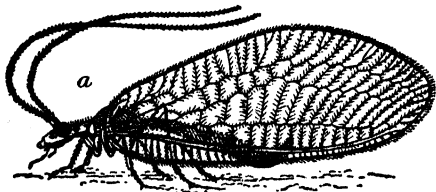
LACE/LEAF'. A Madagascar aquatic plant. See LATTICE-LEAF.

LACÉPÈDE, lās'sā'péd', BERNARD GERMAIN ETIENNE DE LA VILLE, COMTE DE (1756-1825). A French naturalist, born at Agen. He early showed his love for natural history and at the same time cultivated music and composed several operas, which, however, were never produced. Gluck encouraged his talents in this direction, and Lacépède wrote a treatise on *La poésie de la musique* (1781-85), which was favorably received. After the appearance of his *Essai sur l'électricité* (1781) and *Physique générale et particulière* (1782-84), Buffon appointed him subdemonstrator in the Jardin du Roi. His *Histoire des quadrupèdes ovipares et des serpents* (1788-89) and *Histoire naturelle des reptiles* (1789), for many years the standard work on the subject, despite its inevitable errors, are continuations of Buffon's *Histoire naturelle*. He was a member of the Legislative Assembly in 1791, but did not remain in Paris during the Reign of Terror; his life was in danger there because of his conservatism. After his return he was appointed to a special chair for instruction in the history of reptiles and fishes at the Jardin des Plantes and in 1796 became a member of the Institute. His *Histoire naturelle des poissons* (1798-1803) and *Histoire des cétaqués* (1804) are also continuations of Buffon's great work. From 1799 until the end of his life Lacépède took a prominent part in politics. He was made Senator in 1799; in 1803 he became Grand Chancellor of the Legion of Honor and in 1809 Minister of State. After the Restoration of 1814 he was made a peer. His other works include: *Histoire générale physique et civile de l'Europe depuis les dernières années du Vème siècle jusque vers le milieu du XVIIIème* (18 vols., 1826); *Les âges de la nature et l'histoire de l'espèce humaine* (1830); and numberless articles contributed to miscellaneous publications. His works on natural history were collected and published in 1826, 1830, and 1840.

LACERTILIA, lās'ēr-tīl'ŷ-ā, or **LACERTIDÆ**, lā-sēr'ti-dē (Neo-Lat., from Lat. *lacertus*, *lacerta*, lizard). The lacertilians or lizards constitute an order (Autosauri or Lacertilia or Lacertoidea) of saurians, comprising the lizards as distinguished from the snakes. One suborder is known as Lacertæ and includes all the forms except the geckos on the one hand and the chameleons on the other. The typical family of this suborder is Lacertidæ, and its type genus *Lacerta*. This expresses the views of Cope, Boulenger, and Gadow. See LIZARD.

LACER-TO, LAGAR-TO. See LIZARD FISH.

LACE-WING. Any insect of the neuropterous family Hemerobiidæ. The most common forms belong to the genus *Chrysopa*, the golden-eyed flies. They are green or yellowish-green insects, with gauzelike net-veined wings, and emit a very disagreeable odor. The eggs are supported upon a long threadlike peduncle and are thus protected from the depredations of their own larvæ, which prey upon insect eggs, small



A LACEWING (*Chrysopa oculata*).

a, adult fly, enlarged about four times; b, larva, devouring a pest; c, three stalked eggs; d, cocoon, showing the hinged cap lifted by the emerging imago.

larvæ, and especially upon aphids, and for this reason are called aphid lions. The mature larva spins a cocoon from which the pupa escapes before the final molt by means of a circular lid or opening. They are commonly parasitized by the chalcids flies (q.v.) of the genus *Isodromus*. About 40 species have been recorded from temperate North America.

LACHAISE, lā'shāz', FRANÇOIS D'AIX DE (1624-1709). A Jesuit priest, the confessor of Louis XIV. He was born at Aix in what is now the Department of Loire. He had been rector of the Jesuit academies at Grenoble and Lyons and was head of the latter province when Louis called him to be his confessor on the death of Father Ferrier (November, 1675). In the most important questions of his time Father Lachaise avoided extreme courses. He sustained among his contemporaries the reputation of a man of mild, simple, and honorable character. He did not favor violence against the Jansenists, was a friend of Fénelon, and, though partially responsible for the revocation of the Edict of Nantes, regretted the atrocities that followed. He was opposed to the marriage of Louis XIV with Madame de Maintenon, but finally performed the secret ceremony. In spite of the difficulties of his delicate position at court, during

the 34 years that he filled his office of confessor he never lost the favor of the King. He was a man of some learning and fond of antiquarian pursuits. In 1701 he was elected a member of the Académie des Inscriptions et Belles-Lettres, for which he wrote some dissertations. Louis XIV built him a country house to the northeast of Paris, the large garden of which was in 1804 converted into a burial place, known as the Père-Lachaise, the largest and most remarkable cemetery in the world, containing 20,000 monuments, 700,000 graves, and holding the remains of France's greatest men. Consult R. de Chaulantze, *Le père de la Chaise* (Paris, 1859).

LA CHALOTAIS, lā shā'lō'tā', LOUIS RENÉ DE CARADEUC DE (1701-85). A French magistrate, procureur général of the Parliament of Brittany, where he was a decided opponent of the Jesuits. His memoirs, *Comptes rendus des constitutions des Jésuites* (1761, 1762), presented to his Parliament, led to the suppression of the order in France. He also published a work on the reorganization of education, entitled *Essai d'éducation nationale* (1763). This was a remarkable treatise for the times, received high praise from Voltaire, and was widely translated. Later he was subjected to long political persecution, but in 1775 was restored to his place in the Parliament of Rennes. Consult J. Dehaille, *La Chalotais, éducateur* (Paris, 1910).

LACHAMBEAUDIE, lā'shān'bō'dē', PIERRE (1807-72). A French writer of fables, born at Sarlat, Dordogne. He was of humble parentage and received only a rudimentary education, but became known after he went to Paris among the disciples of Saint-Simon. His *Essais poétiques* appeared in 1829, and 10 years afterward, with the financial assistance of Enfantin, he published *Fables populaires*, which were crowned by the Academy and often reprinted. He used to recite them himself at club meetings or concerts. Arrested for his participation in the revolution of 1848, he was with difficulty liberated through Béranger's influence, while the Duke de Persigny saved him from transportation to Cayenne in 1851; but he was banished from France for eight years. While in Brussels he published *Fleurs d'œil* (1851) and afterward *Fleurs de Villemomble* (1861) and *Hors d'œuvre* (1867).

LA CHAPELLE (lā shā'pél') **MAN.** See MAN, SCIENCE OF, *Ancient Types*.

LACHAUD, lā'shō', GEORGES (1846-96). A French advocate, publicist, and romancer, born at Paris, distinguished at the bar. He wrote: *Essai sur la dictature* (1875); *L'Empire devant l'ouvrier* (1876); *L'Empire* (1877); *Les bonapartistes de la République* (1877); *Que vont devenir les bonapartistes?* (1879); *Le prince Napoléon et le parti bonapartiste* (1880); *Bonapartistes blancs et bonapartistes rouges* (1885); and the lighter works, *Choses d'amour* (1881); *Mieux vaut en rire* (1882); *Pour l'argent* (1883); *Impitoyable amour* (1884); *Oh! mesdames* (1885); *Cabotinage* (1886).

LA CHAUSSÉE, lā shō'sā', PIERRE CLAUDE NIVELLE DE (1692-1754). A French dramatist who first merged tragedy and comedy in France and so created the *drame*, or melodrama. There was already a tragedy of common life (*tragédie bourgeoise*) and a pathetic comedy (*comédie larmoyante*). La Chaussée combined these, as, e.g., in *Le préjugé à la mode* (1735), and thus furnished a basis for the dramaturgic theories



LACHINE RAPIDS

of Diderot. His best works are: *Mélanide* (1741), in which he developed the best type of *comédie larmoyante*; *L'Ecole des mères* (1744); *La gouvernante* (1747). But though these beginnings of a large and important section of the modern drama are of great interest, intrinsically the work of La Chaussée is of small value. The heatregoing public of his time, however, thought that he was a great dramatist. Voltaire in the eighteenth century and Villemain in the nineteenth have severely criticized him. Consult: J. Uthoff, *Nouvelle de la Chaussée's Leben und Werke* (Heilbronn, 1883); Lanson, *La Chaussée et la comédie larmoyante* (Paris, 1887); Brunetière, *Epoques du théâtre français* (ib., 1892).

LACHELIER, lăsh'lyă', JULES (1832-). A French philosopher, born at Fontainebleau. From 1864 to 1875 he was professor of philosophy at the Ecole Normale Supérieure, where he did much to encourage philosophic study. He was also closely connected with educational work and was director of the Normal conferences till 1877, when he became inspector of the Paris Academy. Two years afterward he was appointed instructor general of public education, and in 1901 this appointment was made honorary. He wrote *Du fondement de l'induction* (last ed., 1898) and *De Natura Syllogismi* (1871). His philosophy is neo-Kantian.

LACHES, lăsh'ez (OF *lachesse*, remissness, from *lache*, *lasche*, Fr *lâche*, lax, remiss, from Lat. *laxus*, slack). In law, such an unreasonable delay in asserting a right or prosecuting a remedy as will be available, as a defense in a suit of equity, to a person prejudiced thereby. For the defendant to make out a defense of laches on the part of the plaintiff, he must prove (1) that the plaintiff, knowing all the facts concerning his alleged rights, has negligently or willfully neglected to prosecute his suit; (2) that the defendant has never recognized any rights in the plaintiff to the subject matter in question; (3) that the defendant, relying on the apparent acquiescence of the plaintiff or in ignorance of his claims, has altered his position in consequence of the delay, to such an extent that he will suffer loss if the plaintiff's alleged rights are sustained.

It is a defense resting in the discretion of the court and in this respect differs from that of the statutes of limitations, which provide fixed limits of time within which an action must be commenced. Therefore a reasonable excuse for delay or apparent neglect will always be considered by the court. Thus, severe illness of the plaintiff, the fact that he was ignorant of his rights, that negotiations for settlement had been pending between the parties bona fide, or that the delay was caused by fraud or concealment on the part of the defendant, have all been held to be reasonable excuses for delay in enforcing equitable rights. A person under a legal disability, as an infant, an idiot or lunatic, a married woman at common law, or other person legally incompetent to bring an action, will not be considered as guilty of laches until the disability ceases.

In courts of admiralty substantially the same principles as the above are followed, but the court is not bound by precedents in state courts. See **LIMITATION OF ACTIONS**, and consult the authorities referred to under **PRACTICE; EQUITY**.

LACHES, lă'kěz (Lat., from Gk. *Λάχης*, 475-418 B.C.). An Athenian general in the

earlier part of the Peloponnesian War. With Charades he was sent to Sicily with a fleet, in 427 B.C., to support Leontini in her struggle with Syracuse. On the death of his colleague he came to sole command, but accomplished little, as the Sicilians soon reconciled their differences. As leader of the moderate party, Laches was opposed by Cleon and lost much of his influence until Cleon's death, but in 421 he induced the Athenian assembly to agree to the Peace of Nicias (q.v.). Three years afterward he was put in command of the Athenian forces and was killed at Mantinea (418). One of Plato's dialogues is named after him.

LACHES, lă'kěz. A dialogue of Plato. Ly-simachus and Melesias, desiring a better education for their boys than that which they have enjoyed, consult Nicias and Laches about the importance of fencing. Socrates is appealed to and leads the discussion to a consideration of the nature of courage. The dialogue is enlivened by irony and witty repartee.

LACHESIS, lăk'ez-sis (Lat., from Gk. *Λάχης*). In Greek mythology, one of the three Fates. See **PARCE**.

LACHINE, lă-shēn'. A town in Jacques Cartier Co., Quebec, Canada, on Lake St. Louis and the Grand Trunk and Canadian Pacific railways, 8 miles south-southwest of Montreal (Map: Quebec, E 5). It is a favorite summer residence of many Montreal citizens and a popular winter resort of pleasure parties. The Lachine Canal, built to avoid the famous Lachine rapids on the St. Lawrence, connects the town with Montreal, and all the water commerce between that city and the West passes through this canal. The town is the starting and landing place for the Ottawa line of steamers for Kingston, Ottawa, Toronto, and Hamilton. It is the seat of extensive electric-power works which supply Montreal, and it has electric-railway connection with that city. Its industrial establishments include electric-lighting companies, manufactories of wheels, drainpipes, wire rope, screws, doors and sashes, boats, and radiators. In 1910 the value of the manufactured output was \$6,295,716. The name Lachine was given to the site in 1669, in derision of early explorers who after reaching this point returned to their companions at Montreal, whom they had left four months previously, hoping to reach China by way of the St. Lawrence. In 1689 the Iroquois burned Lachine and massacred all the inhabitants. Pop., 1901, 5561; 1911, 10,699.

LACHISH, lă'kish (Heb. *Lākish*). A city of Judah, which several times played a part in Hebrew history (Map: Palestine, B 4). The King of Lachish and four allies are said to have been routed by Joshua (Josh. x. 1-33) and Lachish taken. The city was given to the tribe of Judah (xv. 39) and in the time of Rehoboam became a strong fortress (2 Chron. xi. 9). It was to Lachish that King Amaziah fled when a conspiracy obliged him to leave Jerusalem, and he was slain there (2 Kings xiv. 19). There is a remarkable reference to the city in a discourse of the prophet Micah (i. 13), who denounces the place as "the beginning of sin to the daughter of Zion," in which all the transgressions of Israel were found. Sennacherib in his raid on the Kingdom of Judah (in 701 B.C.) took Lachish, together with other fortified cities, and on his return to Assyria had a sculpture prepared in which he depicts himself seated on his throne at Lachish and receiving the Jewish captives.

It was to Lachish that King Hezekiah of Judah sent messengers with gifts and promises in the hope of inducing Sennacherib to spare Jerusalem (2 Kings xviii. 14-16) and abandon the campaign. Lachish was besieged by Nebuchadnezzar on his invasion of Palestine (Jer. xxxiv. 7) and is mentioned among the cities resettled by the Jews in the Persian period (Neh. xi. 30). Flinders Petrie and Bliss have identified Lachish with Tell el-Hesi, a mound of ruins, the situation of which corresponds to that required for Lachish, 16 miles east of Gaza. The remains of eight cities, one above another, were found on excavating this mound, and the history they indicate for the spot agrees with what is known of Lachish to such an extent as to make the identification all but certain. Consult: Schrader, *Cuneiform Inscriptions and the Old Testament*, vol. ii (London, 1885-88); Petrie, *Tell el-Hesi* (ib., 1891); Bliss, *A Mound of Many Cities* (ib., 1894); Rogers, *Cuneiform Parallels to the Old Testament* (New York, 1913).

LACHLAN, lăk'lan. A river of New South Wales, Australia (Map: New South Wales, C 3). It has its source in the Cullarin Range, 175 miles southwest of Sydney, and flows first northwest through an uneven forest region, then southwest through the great treeless plains, where in the dry season it is sometimes reduced to a chain of ponds. It joins the Murrumbidgee after a course of 700 miles, and through the latter it discharges into the Murray on the south boundary of the state.

LACHMANN, lăg'măn, KARL KONRAD FRIEDRICH WILHELM (1793-1851). A celebrated German critic and philologist, born at Brunswick. He studied at the universities of Leipzig and Göttingen, became professor in the University of Königsberg in 1818 and in that of Berlin in 1825. He is regarded as one of the founders of modern philology. His literary activity was extraordinary. He was equally devoted to classical philology and to old German literature and illustrated both with a profound and critical sagacity. The list of his published works is exceedingly long. Among his more important productions were editions of the *Nibelungenlied* and the works of the minnesinger Walther von der Vogelweide and Wolfram von Eschenbach; editions of Lucretius (4th ed., 1832), Catullus, Tibullus, Propertius, Lucilius, Terentianus Maurus, Babrius, Avianus, Gaius, the *Agri-mensores Romani*; and the text of the New Testament (1831), of which, in collaboration with Buttmann, he published a larger edition in two volumes, with the Latin Vulgate translation, in 1842 and 1850. His greatest work is his edition of Lucretius. He died in Berlin. For his place in Germanic philology, consult Von Raumer, *Geschichte der germanischen Philologie* (1870). Consult his *Life*, by Hertz (Berlin, 1851), and Sandys, *A History of Classical Scholarship*, vol. iii (Cambridge, 1908).

LACHNER, lăc'nēr, FRANZ (1803-90). An eminent German orchestral composer and contrapuntist, born in Rain, Bavaria. He studied under his father (piano), and Eisenhofer (composition), and, becoming very proficient on the pianoforte, organ, and violoncello, he went to Vienna in 1822 to study composition and counterpoint under Stadler and Sechter and was fortunate enough to become intimate with Schubert. In 1836 he became court kapellmeister in Munich and in 1852 was appointed director general of music, but retired in 1868, dissatisfied

with the growing fondness of the court for the music of the Wagnerian school. Lachner is regarded as a classic composer in Germany and is universally esteemed for his skill in contrapuntal work. His works include operas, symphonies, chamber music, pianoforte music, songs, and part songs. His suites for orchestra are his masterpieces and show great skill in harmony and counterpoint. He died in Munich. Three of his brothers, THEODOR (1798-1877), IGNAZ (1807-95), VINCENT (1811-93), also achieved distinction as composers and conductors.

LACHRYMÆ CHRISTI, lăk'ri-mē kris'ti (Lat., tears of Christ). A muscatel wine of a sweet but piquant taste and a most agreeable bouquet, which is produced from the grapes of Mount Somma, near Vesuvius, the name being derived from that of a near-by monastery. There are two kinds, the white and the red, the first being generally preferred. The demand for this wine being greater than the supply, large quantities of that produced in Pozzuoli, Istria, and Nola are sold under this name.

LACHRYMAL (lăk'ri-mal) **ORGANS**. The lachrymal organs consist of the gland which secretes the tears and is situated in the anterior upper and outer part of the orbit; of the puncta, the canaliculi, the lachrymal sac, and the nasal duct. The diseases of these organs are limited to growths affecting the gland, inflammation of the sac (dacryocystitis), excessive secretion of tears, and impediments to their escape in the nose. See EYE.

LACHRYMATORY, lăk'ri-mă-tō-rī (from ML. *lacrimatorium*, *lacrymatorium*, vessel for tears, from Lat. *lacrima*, tear). The name applied to small bottles of glass or earthenware found in ancient tombs. Such bottles were really used to contain perfumes, but the name "lachrymatory" was given to them under the erroneous supposition that they were used to contain the tears of the friends of the deceased.

LACHUTE, lă-shōōt'. A town and the county seat of Argenteuil Co., Quebec, Canada, on the North River, 45 miles west by north of Montreal, on the Canadian Pacific and the Canadian Northern railroads (Map: Quebec, D 5). Its industrial establishments include saw mills and manufactories of builders' materials, pulp, paper, furniture, knitted goods, and woollens. Pop., 1901, 2022; 1911, 2407.

LACIN'IUM PROMONTORIUM (now Capo delle Colonne). A promontory on the Italian coast, 7 miles southeast of Crotona; famous in ancient times for the worship of Juno. Of a temple of Juno, dating from the fifth century B.C., one Doric column, 26½ feet high, survives together with the massive substructures on which it stands. Excavations were made here, in 1886-87, by the Archaeological Institute of America. Later, a dedicatory inscription to Juno, of the sixth century B.C., was found. Consult *Notizie degli scavi* (1897), and Koldey-Puchstein, "Die griechischen Tempel," in *Unteritalien und Sicilien* (Berlin, 1899).

LAC INSECT. Any one of the several scale insects of the coccid genus *Carteria*, which secretes lac (q.v.). *Carteria lacca*, of Asia, secretes the gum lac or stick lac of commerce and is found upon fig trees (*Rhamnus*, *Croton*, and *Butea*). *Carteria larrea*, of the southwestern United States and Mexico, feeds on the creosote bush (*Larrea mexicana*) and secretes quantities of lac, which, however, has not been commercially used. A third species (*Carteria mexi-*

cana) occurs in Mexico upon the mimosa, but its product has not been used in commerce. The body of the adult female is saclike in form, with no legs, and is embedded in a mass of lac. The anal end of the body is furnished with three prominent tubercles, of which one, the largest, is really the terminal segment of the body, each of the others bearing a perforated plate which is presumably the organ through which the lac is excreted. If a bit of commercial stick lac be examined, it will be found to consist of an incrustation, one-fourth to three-eighths of an inch in thickness, upon small twigs. This incrustation is filled with elongated cells in each of which are the shriveled remains of the insect which originally filled the cell and determined its size and shape. The insect is of the shape of a jug with three necks, and each of the necks fits into a tubular opening from the cell and really forms a lac tube, each being provided with a spiracle for breathing purposes. The females are viviparous, and the young, reddish in color and provided with functional legs, issue from one of the tubes, crawl out upon the twig, and settle. The males, as with other scale insects, become winged. The lac produced by *Carteria larrea* upon the creosote bush is chemically identical with the commercial Asiatic product, but the masses produced by the individual insects are not crowded together as compactly and preserve a rather globular form. Consult: O'Connor, *Lac: Production, Manufacture, and Trade* (2d ed., Calcutta, 1876); Stillman, "Origin of the Lac," in *The American Naturalist*, vol. xiv (Philadelphia, 1880); Comstock, *Annual Report of the United States Department of Agriculture for 1881-82* (Washington, 1882).

LA CIOTAT. See CIOTAT, LA.

LACKAWANNA, lăk'ă-wŏn'nă. A city in Erie Co., N. Y., 5 miles by rail south of Buffalo, on the Pennsylvania, the Buffalo, Rochester, and Pittsburgh, the Lake Shore and Michigan Southern, the Lehigh Valley, the South Buffalo, and the Buffalo and Lake Erie Traction railroads (Map New York, B 5). It contains St. John's Rectory, the St. Joseph Orphan Asylum, and the Moses Taylor Hospital. The city has a large steel plant, extensive bridge works, coking plants, and blast furnaces. Pop., 1910, 14,549; 1914 (U. S. est.), 19,012.

LACKAWANNA RIVER. A small river of Pennsylvania. It rises in the northeastern corner of the State and flows southwesterly through a narrow valley formed by the Shawnee and Moosie mountains, emptying, after a course of 50 miles, into the North Branch of the Susquehanna at Pittston (Map: Pennsylvania, K 3). It derives its importance from the fact that its valley with its southwest continuation, known as the Wyoming valley, contains the largest and most important anthracite coal beds in the United States. On the banks of the river are numerous cities and towns, the largest of which is Scranton, and the valley is filled with collieries, rolling mills, blast furnaces, and factories.

LACKAYE, lăk-ŷ', WILTON (1862-). An American actor, born in Loudoun Co., Va. He was educated at Georgetown University (which gave him an honorary B.A. in 1914) and for a year studied law. In 1883 he entered on his theatrical career in New York City with Lawrence Barrett in *Francoesca da Rimini* at the Star Theatre. His best-remembered rôles

include those in *Jocelyn* (1889); *Featherbrain* (1889, 1907); *The Idler* (London, 1891); *Aristocracy* (1892, 1907); *Tribby* (1895, 1907, 1915); *The Children of the Ghetto* (1889); *Quo Vadis?* (1901); *The Pit* (1903-04); *The Pillars of Society* (1905); *Law and the Man* (1906); *The Battle* (1908); *The Stranger* (1911).

LACK'EY MOTH. A name given in England to a bombycid moth (*Chasmodon neustria*) on account of the color and marking of its wings, which remind one of a lackey's livery. It is closely related to the American tent caterpillars. See TENT CATERPILLAR.

LACLÈDE, lă'klăd', PIERRE LIGUESTE. See LIGUESTE, PIERRE LACLÈDE.

LA CLOCHE, JAMES DE (c.1644-69). An English adventurer, born in Jersey. He moved to London in 1665 and in 1668 registered with a Jesuit House of Novices at Rome. During his life he was supposed to be a natural son of Charles II—he carried documents pretending acknowledgment of the fact—and indeed as late as 1862 Lord Acton deduced evidence to show that such was the case. But it is now generally acknowledged that La Cloche was an impostor, and that his documents were forged.

LACLOS, lă'klô', PIERRE AMBROISE FRANÇOIS CHODERLOS DE (1741-1803). A French novelist, best known as the author of *Les liaisons dangereuses* (1782), the most remarkable of many literary revelations of the moral dry rot in the pre-Revolutionary French aristocracy.

LAC'OBRI'GA. An ancient Roman town in Portugal. See the last LAOS.

LACOMBE, lă-kôm'. A town in the Red Deer District, Alberta, Canada, on the Calgary-Edmonton branch of the Canadian Pacific Railway, 80 miles south of Edmonton and 112 miles north by east of Calgary (Map: Alberta, G 6). It is the seat of the Alberta Industrial Academy and of a Dominion experimental farm. Its industrial establishments include grain elevators, grain warehouses, lumber yards, flour mill, pump works, foundry and machine shop, harness works, and creamery. The town owns its electric-light plant. Pop., 1911, 1029.

LACON, lă'kon. A city and the county seat of Marshall Co., Ill., 27 miles by rail north by east of Peoria, on the Illinois River and on the Chicago and Alton Railroad, and having bridge connection with the Rock Island Railroad at Sparland (Map. Illinois, F 3). It has a fine high-school building and a school library. There are grain elevators, woolen mills, marble works, and considerable grain trade. The water works are owned by the city. Pop., 1910, 1495.

LA CONDAMINE, lă kôn'dă'mên', CHARLES MARIE DE (1701-74). A French traveler and mathematician. He was born in Paris, passed an adventurous youth, and after serving in the army began to study science. As a chemist, he made some reputation, and in 1731 traveled through the Mediterranean, exploring the coasts of Africa and Asia Minor and making scientific collections. Having studied mathematics for the purpose, he was sent by the Academy of Sciences, with Bouguer and others, to Peru, to measure a meridional arc on the equator to show more accurately the shape of the earth. In Peru he remained from 1735 to 1744. He wrote: *Distance of the Tropicks* (1738); *La figure de la terre* (1749); *Journal du voyage fait par ordre du roi à l'équateur* (1751); *Mémoires sur l'immolation* (1754-65). His account of caoutchouc, published in 1751, caused

the introduction of this valuable substance into Europe. He became a member of the Royal Society of London in 1748 and in 1760 of the Academy of Sciences of Paris. He promoted inoculation for smallpox and urged the adoption as a universal measure of the length of a second pendulum at the equator.

LACONIA. An ancient geographical division of Greece. See SPARTA.

LACONIA. A city and the county seat of Belknap Co., N. H., 102 miles by rail north of Boston, Mass., between Lakes Winnesquam and Winnepesaukee, on both banks of the Winnepesaukee River, and on the Boston and Maine Railroad (Map New Hampshire, G 6). It is closely connected with other popular summer resorts of this lake region, is laid out with broad streets, and has a State home for feeble-minded children, county farm, home for the aged, opera houses, a cottage hospital, and public library and park. The city is a prosperous manufacturing centre with car shops, lumber mills, hosiery mills, foundries and machine shops, a paper-box factory, and manufactures of knitting machinery, friction clutches, needles, etc. Pop., 1900, 8042. 1910, 10,183; 1914 (U. S. est.), 11,094.

LACONICUM. See BATH, Rome.

LACORDAIRE, lá'kór'dâr', JEAN BAPTISTE HENRI (1802-61). A distinguished French preacher and publicist, the restorer of the Dominican Order in France. He was born at Reccy-sur-Ouche, near Dijon, in which town he was educated, taking up ultimately the study of the law. When he went to practice in Paris, his studies of the evidences of Christianity gradually drew him away from the following of Rousseau, which had marked his earlier youth and he decided to become a priest. He studied at the Seminary of St. Sulpice, and was ordained in 1827. He entered upon his work with zeal, but, meeting with discouragement, almost decided to accept the invitation of Bishop Dubois, of New York, to come to America as his vicar-general. He had already come much under the influence of Lamennais (qv) and after the revolution of 1830 threw himself enthusiastically into the work of the *Avenir*. Its editors, at his suggestion, founded a "general agency for the defense of religious liberty," as a practical support of their ideas, its most significant result was the winning of a moral victory for the cause of religious education. When the *Avenir* was condemned by Gregory XVI, Lacordaire submitted and for a time withdrew from political affairs. He had gone to Rome with Lamennais, but he saw the logical consequence of his old master's position and parted company with him finally at the end of 1832. Two years later he began a series of apologetic *conférences* which laid the foundation of his fame as a preacher, such men as Chateaubriand, Berryer, and Hugo were already among his regular hearers. His lectures were suspended for a time, owing to the suspicion aroused by his former association with Lamennais; but in 1835 the Archbishop selected him as the Lent preacher at Notre Dame, where his sermons once more caused an extraordinary sensation, not less than 6000 people sometimes attending them. His decision to enter a monastic life caused an interruption (1836-43). He defended the right of the Dominicans (the order of his choice) to French citizenship in his *Mémoire pour le rétablissement des Frères Prêcheurs en*

France (1839) and entered the order a few weeks later. At the end of 1840 he returned to France in the Dominican habit, which had not been seen there for half a century. His *Vie de Saint Dominique* appeared at the same time, and he presently returned to Rome with 10 more novices. In 1843 he was able to found at Nancy the first new house of the order in France. He gave much of his time to preaching in various parts of France. In 1845 were delivered the eight conferences on the divinity of Jesus Christ, which Montalembert considered the greatest triumph of modern Christian oratory. He still maintained his interest in political affairs and was chosen deputy from Marseilles to the Assembly after the revolution of 1848, but soon resigned. His courses of sermons were continued till 1850. His health began to decline in 1854, and he withdrew to the convent of Sorèze. In 1860 he published his pamphlet, *De la liberté de l'église et de l'Italie*, in which he protested vigorously against the interference of Napoleon III with the States of the Church. In the same year he was elected to the French Academy, and made his last public address there, on his predecessor, De Tocqueville. He resigned his office as provincial of the Dominicans in August, 1861, and died on November 20. His works appeared in nine volumes (Paris, 1873 et seq.) Three supplementary volumes of sermons and addresses were published in 1884 et seq., and *Lettres inédites* in 1881. Consult lives by Montalembert (Paris, 1862), Foisset (2d ed., ib., 1874), Greenwell (ib., 1877), Mrs. Sidney Leat (London, 1882), Chocarne (8th ed., ib., 1894, trans., 9th ed., ib., 1901), D'Haussonville (Paris, 1895), Ledos (ib., 1901); Nicolas, *Le père Lacordaire et le libéralisme* (Toulouse, 1886). Fesch, *Lacordaire journaliste* (Paris, 1897), Marcel Foulon, "Lacordaire et Madame Swetchine," in *Revue de Lille*, vol. xxv (ib., 1913), and many important letters in *Correspondance de Lacordaire et de Madame Swetchine* (ed. Falloux, 4 vols., ib., 1865).

LACORDAIRE, JEAN THÉODORE (1801-70). A prominent French naturalist and traveler, brother of the preceding, best known for his entomological studies. He was born at Reccy-sur-Ouche and gave up his legal studies at Dijon to devote himself to natural science. Between 1825 and 1832 he made four voyages to South America and one to Senegal, some account of which he gave in the *Temps* and the *Revue des Deux Mondes*. The chair of zoology at Liège was voted him in 1835 and in 1838 a professorship in comparative anatomy. He wrote: *Introduction à l'entomologie* (1834-37), *Faune entomologique des environs de Paris* (1835), with Boissduval, and the great work on Coleoptera, *Histoire naturelle des insectes, genres des coléoptères* (12 vols., 1845-76), which describes more than 8000 genera.

LA COSA, JUAN DE. See COSA, JUAN DE LA.

LACOSTE, lá'kóst', SIR ALEXANDRE (1842-) A Canadian jurist. He was born in Boucherville, Quebec, was educated at St. Hyacinthe College and Laval University, and was admitted to the bar in 1863. In 1880 he was appointed queen's counsel and from 1882 to 1884 was a member of the Legislative Council of Quebec. He was called to the Dominion Senate in 1884 and served as Speaker in 1891. In the latter year he was appointed Chief Justice of Quebec. In 1892 he became a Privy

Councilor of Canada and was knighted. For several years he was professor of civil law in Laval University. He retired from the bench in 1907 and became a consulting counsel in Montreal.

LACQUER, lāk'ēr. See LAC; LACQUER WORK; VARNISH.

LACQUER AND LACQUER WORK (lacquer is a variant of the Eng. *lac*, Ger. *Lack*, Fr. *laque*, It. *lacca*, ML. *laca*, Pers. *lak*, Hind. *lākḥ*, Skt. *lakṣa*, the same as the Indian numeral *lac*, a hundred thousand, suggested by the number of the insects that produce the substance). In general, any of the resinous varnishes used in India, China, and Japan, to finish with a hard polish furniture and other decorated objects of wood.

In Europe and America *lacquering* means varnishing metallic surfaces with a protective coat of shellac. (See VARNISH.) The so-called lacquers of China and Japan are not made from *lac* (q.v.) at all, but are obtained by tapping the *Rhus vernicifera*, or varnish tree. This tree is native to China and, like the art of lacquering, was introduced from China into Japan in remote antiquity. The varnish tree is found wild in the woods of China and is also cultivated along the margins of fields. It is especially abundant in the mountains of Central Asia, having an altitudinal range of from 3000 to 7500 feet. In Japan it does not grow wild, it is cultivated principally from Tokyo northward, and it is tapped when about 10 years old.

Chinese Lacquer Work. Lacquer work is one of the earliest of the Chinese industrial arts, but there exist no records of its origin, or of its development from a mere preservative coating to an almost indestructible surface of the highest artistic merit. The three processes in the manufacture of Chinese lacquer work are (1) the preparation and coloring of the lacquer, (2) the application by spatula and brush in successive layers, from 3 to 18, each layer being allowed to dry completely before the next is put on, (3) the decoration of the lacquered surface. The lacquered objects are usually of wood well seasoned and carefully prepared so that the shell is sometimes as thin as a sheet of paper. Joints or accidental cracks are filled in with a lute of chopped hemp and other materials, a sheet of broussonetia paper or silk gauze is pasted on; a coating of burnt clay and varnish is applied; and the surface is then worked smooth with a whetstone. After the various layers of lacquer have been applied the work of the decorative artist begins. He selects for his motif a landscape or figure scene, birds and flowers, fishes and water weeds, etc.; sketches it in with a paste of white lead, fills in the details with gold and polychrome, and superposes a coat of transparent lacquer. If parts of the design are to be in relief, they are built up of a putty composed of lacquer colored and tempered with other ingredients. In most fine lacquers there is so much gold that the effect is warm and rich. The very finest gold lacquers are left undecorated, their beauty depending upon the multitude of tiny metallic grains shining from the depths of a pellucid ground.

Japanese Lacquer Work. Although the Japanese borrowed the art of lacquering from China, they brought it centuries ago to a height of perfection never attained by the Chinese.

Indeed by some authorities it is ranked first among Japanese art industries on account of the many thousands to whom it gives employment and the extreme patience and artistic skill displayed. A large proportion of the furniture and utensils used in a Japanese household owe their strength and durability to the lacquer that covers and protects them. The earliest mention of lacquer work in the records of ancient Japan is in the reign of Emperor Ko-an, who ascended the throne in 392 B.C., the next mention is in the reign of Emperor Ko-toku, who ascended the throne in 645 A.D. At that time lacquered articles were accepted by the government in payment of taxes, and it was ordained that Imperial coffins should be covered with lacquer. The invention of red lacquer is credited to the reign of Emperor Temmu (673-686). During the reign of the three emperors who ruled from 708 to 748 the industry made great progress, five different colored lacquers being used, and the practice of inlaying with mother-of-pearl and of lacquering gold, silver, copper, and leather being adopted. In the tenth and eleventh centuries the industry flourished, particularly in Tokyo; and also in the fifteenth century under the Shogun Yoshimasa, who bothered little about the affairs of state, but devoted himself to the encouragement of the fine arts, particularly of lacquer work. At the time Chinese patterns and methods of working were much copied. Quin gives a list of 33 Japanese workers in lacquer from 1175 A.D. down to the present day. Among them the greatest artist in incrustated and embedded lacquer is Korin, born at Tokyo in 1661. He was not only a consummate artist in lacquer, but a designer and painter of singular power and originality. Audsley illustrates a panel by him, the ground of which is deep green streaked and spotted with red, the mountains and water in low relief in gold and *koban*, the bank of the stream in incrustated lead. The lower part of the panel is filled with large iris flowers and leaves, the leaves alternating lead and gold, the flowers executed with broad margins of richly tinted mother-of-pearl and depressed centres of gold lacquer.

European Lacquer Work. As early as the fifteenth century small pieces of lacquer ware—cups, trays, boxes—began to find their way from Japan and China to western Europe. Indian cabinets, as they were then called, are occasionally mentioned in English inventories of the reign of Elizabeth, and during the first 30 years of the seventeenth century a number of lacquered cabinets and screens were imported from the Far East to England via Holland. Before long English and Dutch craftsmen were inspired to attempt to imitate Oriental lacquer on furniture, and by 1689 the art of *japanning*, as it was then called, was widespread, even being considered a fashionable pursuit and taught as an extra accomplishment in girls' schools. The garrets of many old English country houses still contain many worn-out boxes and tables adorned with this amateur decorative work. However, even the most skillful imitations did not attain the brilliancy and smoothness of the Oriental originals; and the lustre of the different golds was less metallic, while the design lacked the individuality and harmonious proportions characteristic of the Oriental artist. Frequently unmounted lacquer panels were imported from the Orient to be made up into

furniture in the Netherlands, France, and England, but cabinets entirely of Oriental manufacture continued to be preferred. In the household accounts of Charles II there is an entry of £100 paid for "two jappan cabinets." These were probably of cut lacquer, in which the hollowed-out designs are filled in with polychrome that contrasts brilliantly with the black ground. MacQuoid illustrates a number of pieces of lacquer furniture made in England in the last third of the seventeenth century and reproduces extracts from several of the numerous handbooks on lacquering.

The art continued to flourish in England till about 1760 and in 1740 was still regarded as a polite occupation, for in the descriptive catalogue of the contents of Strawberry Hill Sir Horace Walpole enumerates a cabinet "japanned by Lady Walpole." The book of lacquer designs published by Edwards and Daryl in 1754 should have given the art substantial help; but Robert Dossie only 10 years later, in 1764, in his *Handmaid to the Arts* writes of japanning as "not at present practiced so frequently on chairs, tables and other furniture of houses except tea-waiters, as formerly." After 1725 the importation of Dutch lacquer, that during the reign of William and Mary had been considerable, declined almost to nothing. But lacquered panels for doors and drawer fronts, ready to be made into cabinets in Europe, continued to come from China and Japan, some of them made to order in prescribed designs. MacQuoid illustrates many eighteenth-century pieces of English lacquer furniture, among them a most beautiful commode designed by the great architect, Robert Adam, for Osterly. The serpentine front consists of one long door with Chinese landscape, house, and warriors in black and gold, the top drawer and side panels having smaller landscape pictures.

Imitations of Oriental lacquers were also common in France during the last half of the seventeenth century in the reign of Louis XIV, and the process was brought to perfection in the reign of Louis XV by the brothers Martin under the name "verniss-martin" (q.v.).

Bibliography. On Chinese lacquer, S. W. Bushnell, *Chinese Art* (London, 1909). On Japanese lacquer, J. J. Quin, "The Lacquer Industry of Japan," in *Transactions of the Asiatic Society of Japan*, vol ix (Yokohama, 1881); G. A. Audsley, *Ornamental Arts of Japan*, with many large and splendid illustrations in color of masterpieces owned in Great Britain (London, 1882); Louis Gonse, *L'Art japonais* (Paris, 1883); A. B. Stevens, *Contribution to the Knowledge of Japanese Lac, Kiurushi* (Ann Arbor, 1906); Majima and Chô, "Ueber den Hauptbestandteil des japanischen Lacks," in *Imperial University of Japan, College of Science, Journal*, vol. xxv (Tokyo, 1908). On European lacquer, Emile Molinier, *Histoire des arts appliqués à l'industrie*, vol iii (Paris, 1898); Percy MacQuoid, *History of English Furniture*, vols. ii, iv (London, 1904, 1908); Seeligmann and others, *Handbuch der Lack- und Firnis-Industrie* (Berlin, 1910).

LACRETELLE, là'kr'-tèl', HENRI DE (1815-99). A French politician and writer, son of J. C. D. de Lacretelle, born in Paris. He was deputy for Saône-et-Loire in the National Assemblies of 1871, 1876, 1877, and every succeeding four years up to 1893; belonged to the Left Radical party, opposed the Broglie faction, and inter-

ested himself specially in education. His principal works are a volume of verse, entitled *Les cloches* (1841); *Dona Carmen* (1844); *Nocturnes* (1846); *Contes de la méridienne* (1859); *La poste aux chevaux* (1861); *Lamartine et ses amis* (1878); and the three-act play *Fais ce que dois* (1856), in collaboration with M. Decourcelle, which was produced at the Théâtre Français. He was the friend of Lamartine and the promoter of the George Sand Memorial (1876).

LACRETELLE, là'kr'-tèl', JEAN CHARLES DOMINIQUE DE, called LE JEUN (1766-1855). A French historian and publicist, born in Metz, the brother of Pierre Louis de Lacretelle. He was educated for the bar at Nancy and went to Paris in 1787, where he wrote for the *Encyclopédie méthodique* and the *Journal des Débats*, for which he reported the sessions of the Assembly. In 1790 he became secretary to the Duke of La Rochefoucauld-Liancourt, whom he assisted in promoting the King's attempted escape. Afterward he joined the army and was one of the most prominent of the jeunesse dorée (q.v.). On account of his Royalist sympathies he was imprisoned for about two years (1797-99). During this term he completed Rabaut Saint-Etienne's *Précis de l'histoire de la Révolution* (1801-06). In 1809 he was made professor of history at the University of Paris, a post he held until 1848. He was twice censor of the press—in 1810 under Napoleon and in 1814 under Louis XVIII—and was made a member of the Academy in 1811. As an historian, he is not sufficiently critical or impartial; but his works contain much that is interesting, from the personal part he played in the events he describes. They cover the period of the Revolution very thoroughly and include the following: *Histoire de France pendant le XVIIIème siècle* (1808); *Histoire de France pendant les guerres de religion* (1814-16); *L'Histoire de l'Assemblée constituante* (1821); *L'Assemblée législative* (1824); *La convention nationale* (1824-25); *Histoire de France depuis la Restauration* (1829-35); *Histoire du Consulat et de l'Empire* (1846); *Dix années d'épreuves pendant la Révolution* (1842); *Testament philosophique et littéraire* (1840); *Histoire du Consulat et de l'Empire* (1846).

LACRETELLE, PIERRE LOUIS DE, called L'AÎNÉ (1751-1824). A French lawyer, politician, and publicist, born in Metz. He studied law at Nancy, and later he came to Paris, where his journalistic writings attracted the attention and friendship of such men as D'Alembert, Condorcet, Turgot, Malesherbes, and others. His essays *Eloge de Montausier* (1781) and *Discours sur le préjugé des peines infamantes* (1784) were widely discussed. During the Revolution he was a member of the Feuillants in the Legislative Assembly and was one of the chief advocates of the constitution of 1791. He took little part in politics under Napoleon's administration, but after the Restoration joined the party of opposition and was part editor, with Constant, of the *Minerve Française*, later suppressed. His works include: *De l'établissement des connaissances humaines et de l'instruction publique dans la constitution française* (1791); *Idée sommaire d'un grand travail sur la nécessité, l'objet et les avantages de l'instruction* (1800); *Mélanges de philosophie et de littérature* (1802-07); *Fragments politiques et littéraires* (1817).

LACROIX, la'krwä', (ANTOINE FRANÇOIS) ALFRED (1863-). A French mineralogist, born at Mâcon, France, and educated at Paris (D.Sc., 1889). In 1893 he was appointed professor of mineralogy at the Muséum d'Histoire Naturelle of Paris and later became also director of the laboratory of mineralogy at the Ecole des Hautes-Etudes. He became a Chevalier of the Legion of Honor and a member of the Academy of Sciences. Lacroix conducted scientific expeditions to the United States, Canada, England, to Martinique in 1902-03 after the eruption of Mont Pelée, to Italy after the violent eruption of Vesuvius in 1906, and to Madagascar in 1912. He became known especially for his researches on volcanic geology. His writings include. *Minéralogie de la France et de ses colonies* (1893-1903); *Le granite des Pyrénées* (1898); *La montagne Pelée et ses éruptions* (1904); *Les syénites néphéliniques de l'archipel de Los et leur minéraux* (1911).

LACROIX, FRANÇOIS, VISCOUNT (1774-1842). A French general, born at Aymarques and educated at Montpellier. He saw active service when very young, won a victory over the Austrians at Friedberg (1796), and was a brigadier general when but 27 years old. He was a personal friend of both Macdonald and Moreau. (See MACDONALD, ETIENNE; MOREAU, JEAN VICTOR) Disgraced in 1802 by Bonaparte, who bore him enmity, Lacroix sailed for Santo Domingo, where he upheld the French standard, was created major general, and won the good will of the . . . helped him in his strife with the . . . under Christophe. On his return to Europe he took part in the Belgian campaign during the Hundred Days, and in 1820 received command of the division which arrested the Grenoble insurrection, while in 1823 he joined the Spanish expedition, but retired the following year. Disgusted with "legitimacy" as expounded by Louis XVIII, he retired after the revolution of 1830. He published an important work, *Mémoires pour servir à l'histoire de la révolution de Saint Dominique* (2 vols., 1810-20).

LACROIX, JEAN BAPTISTE MARIE ALBERT (1834-1903). A Belgian author and editor, born in Brussels. He took a law course at the university of that city and became known through his prize essay, *Influence de Shakespeare sur le théâtre français* (1855). In order to publish the works of his friends, Socialist refugees from France, he set up a small printing establishment, and it was his enterprise that started the international library of Brussels, forerunner of those in Paris, Leipzig, and Louvain. He published editions of *Les misérables* (1862) and other works of Victor Hugo, of Quinet, Louis Blanc, Michelet, and Charras. He got himself into trouble in Paris for his production of proscribed literature, and Bougeart's *Marat* brought him one month's imprisonment, while Proudhon's *Evangelies* caused his confinement for a year (1866). He rendered important service to French-speaking Europeans by his editions of Gervinus, Mommsen, Grote, Prescott, Bancroft, Washington Irving, and others, while with Jottrand he translated Motley's *Rise of the Dutch Republic*. He began an *Histoire de France* which was left incomplete at his death.

LACROIX, JULES (1809-57). A French novelist and dramatist, brother of Paul Lacroix, born in Paris. He wrote a number of novels, including *Flour à vendre* (1835) and *Un grand*

d'Espagne (1845); *Pervenches* (1834), sonnets; translations of Juvenal and Horace; and plays, which include *Le testament de César* (1849); *Valéria* (1851), with Maquet; *La Fronde* (1855), an opera with Maquet, music by Niedermayer; *Macbeth* (1863) and *King Lear* (1868), translations; *La jeunesse de Louis XI* (1859); and *Edipe roi* (1858), translated from Sophocles, which was crowned by the Academy and still keeps its place on the French stage.

LACROIX, PAUL (1806-84). A French author, known by his nom de plume, Bibliophile Jacob. He was born in Paris, was educated there in the Bourbon College, and at the age of 18 brought out an edition of Clément Marot's *Œuvres complètes*, in three volumes. This was the beginning of his tremendous literary activity, exhibited in the improvement of public libraries, the making of catalogues, and the production of such works as *Costumes historiques de la France* (10 vols., 1852), *Les arts au moyen âge et à l'époque de la renaissance* (1868), *Mœurs, usages et costumes au moyen âge* (1871), and *La vie militaire et la vie religieuse au moyen âge* (1872). In 1854 he became editor of the *Revue Universelle des Arts* and the following year was made also curator of the Arsenal Library. Famous as an historical romancer and specialist in the lore of the Middle Ages, Lacroix was likewise a noted translator, bibliographer, editor, and collaborator with Henri Martin in the history of France and his *Histoire de Soussons* (1837-38), and with Ferdinand Séré in *Le moyen âge et la renaissance* (1847-52). An edition of his essays was published in 1867, in three volumes, called respectively *Enigmes et découvertes*, *Mélanges*, and *Dissertations bibliographiques*. He sometimes wrote under the names of Pierre Dufour and Antony Dubourg.

LACROIX, SYLVESTRE FRANÇOIS (1765-1843). A French mathematician, born in Paris. At the age of 16 he was teacher of mathematics at the naval school at Rochefort; he was afterward teacher in the military school at Paris (1787), professor in the artillery school at Besançon (1788), and examiner of the artillery officers (1793). He was made adjunct professor of descriptive geometry in the Ecole Normale in 1794 and later became professor of mathematics at the Ecole Centrale des Quatre-Nations. He held the chair of analysis in the Polytechnic School (1799), going from there to the Sorbonne and the Collège de France (1815). He was not a discoverer, but he composed some excellent textbooks. His chief works are: *Traité du calcul différentiel et du calcul intégral* (2 vols., 1797; 7th ed., 1867; Ger. ed., 3 vols., 1830-31); *Traité des différences et des séries* (3 vols., 1800; 2d ed., 1810-19); *Essais sur l'enseignement en général et sur l'enseignement en particulier* (2d ed., 1816); *Traité de l'assurance du calcul des probabilités* (1816; 4th ed., 1864; Ger. ed., 1818); *Cours des mathématiques* (9 vols., 1797-1816).

LACROSSE, là-krös'. An American outdoor game, played with a small ball and a hooked stick fitted with a loose net. It . . . originated among the North Ameri . . . and was widely played by them. It was frequently of a ceremonial nature, in the preparation of the young men of a tribe for the war path. The general character of the game was the same among all the tribes, with various minor differences, especially in the size and

shape of the stick, or crosse. The original ball was of hide stuffed with hair, of bark, or of the knot of a tree. The goals were often any convenient rocks or trees; but at grand matches a single pole or two-pole goal was used, situated from 500 yards to half a mile or more apart, the ball to pass the line, strike the pole, or pass between two poles, according to local custom. The Choctaws (according to Catlin) used two poles 25 feet high and 6 feet apart, with a crossbar, suggestive of the football goal. Games lasted for hours. The players, who were put through a long course of training, were, as a rule, almost nude, and often decorated with paint and feathers; old medicine men usually acted as umpires. Catlin saw the game played by from 600 to 1000 at a time and described the Olympic beauty of the contest as beyond all praise. The night before an important game a ceremonial dance occurred.

Modern Lacrosse. The name "lacrosse" was given to the game by the French explorers, from the crosse, or crooked, stick with which it is played. It was taken up by white men about 1840, when a club in Montreal was formed. About 1860 the game became popular in Canada, and in 1861 a notable game between the Montreal and Beaver clubs, and the Caughnawaga and St. Regis Indians—25 players a side—was played before King Edward VII, then Prince of Wales. In 1867 practical rules were formulated by Dr. W. G. Beers, the originator of modern lacrosse, and in the same year the National Lacrosse Association of Canada was formed. A club was formed in Glasgow, Scotland (1867), by a Canadian player, and an Indian team was taken to England and France, where exhibition games were played. A second club was formed in London. Lacrosse was for a long time not much played in England, but it is now very popular there. There are several lacrosse associations in Canada, and the game has been developed by club and college players to a high point of excellence. Lacrosse was introduced into the United States in the early seventies. The Crescent Athletic Club of Brooklyn, N. Y., has the only team of worth in the United States outside of the colleges, many of which have teams.

The Game. The crosse is a light stick, 5 or 6 feet long, crooked at the end so as to allow a loose network of catgut or deerskin to be stretched across—not so tightly as in a tennis racket nor so loosely as to form a bag. The ball, $2\frac{1}{2}$ inches in diameter, is now made of India rubber. The game is usually played on a field about 125 feet long and any convenient width. The fundamental principle of the game is to drive the ball through the opponent's goal, while defending one's own goal from a similar attack. The form of the goal is shown in the accompanying illustration. There are usually 12 players on each side, and the ball is put in play by being placed on the exact centre of the field, after which the two centres stoop down and place the backs of their crosses on either side of the ball, and at the word "play" the crosses are drawn in towards the holders of them. The ball comes to one or the other. The players of the opposing teams at once begin a struggle for the possession of the ball. When scooped up from the ground it is carried horizontally on the stick, the player running towards one of the goals and endeavoring to elude his opponents, being helped on by his own team. If

it seems prudent, he pitches the ball off his stick towards a colleague who may be in a better position to convey it towards the goal. The ball is not touched by the hand. The player with the ball, skillfully dodging his opponents, may succeed in shooting it between the goal posts, thus scoring a goal; or the ball thus thrown may be intercepted and returned by the goal keeper, when the play continues as before. The game is divided into two halves of half an hour; but the teams change sides after each goal is made, the ball being again put in play in the centre of the field. The side scoring the most goals during the game is the winner. Lacrosse is essentially a game of combination. Individual or "star" play is usually fatal to success, and among the best clubs a selfish player is regarded as preferable only to a blind one. Consult: Beers, *Lacrosse, the National Game of Canada* (New York, 1869); *Lacrosse*, in Spaulding's "Library of Sports," issued annually (New York), and Schmeisser, *Lacrosse: An Expert's Instructions* (ib., 1904).

LA CROSSE. A city and the county seat of La Crosse Co., Wis., 198 miles by rail west-northwest of Milwaukee, at the confluence of the La Crosse and Black rivers with the Mississippi, and on the Chicago, Milwaukee, and St. Paul, the Chicago and Northwestern, the Chicago, Burlington, and Quincy, the La Crosse and Southeastern, and the Green Bay, and Western railroads (Map: Wisconsin, B 5). It is the centre of a great dairy and stock-raising region, is an important tobacco market, has a large wholesale trade, and is noted for its manufactures, which are valued at \$20,000,000 annually and include sash, doors and blinds, boots and shoes, plows and other agricultural implements, bridges, violins, automobile parts, gasoline engines, boilers and heavy machinery, stoves, threshing machines, tents and awnings, hammocks, rubber goods, crackers, knit goods, candies, flour, woolen goods, tanned leather, beer and ale, cooperage products, bed springs, mattresses, brooms, cigars, etc. The city ships also considerable quantities of seeds. Sand, gravel, red clay, limestone, and peat are found in the vicinity. La Crosse is surrounded by cliffs, 600 feet high, and has a large public library, a fine city hall, courthouse, post office, high school, State normal school, hotels, four hospitals, United States Weather Bureau Station, county jail, opera houses, wagon bridge across the Mississippi River, and Myrick, Copeland, Riverside, and Pettibone parks, the latter on an island in the Mississippi River. First permanently settled in 1841, La Crosse was incorporated as a city in 1866, its present government being administered, under a revised charter of 1891, by a mayor, elected every two years, and a unicameral council, which elects the health officer, board of education, weighmaster, city attorney, and assessors. Other officials are chosen by popular election. The city owns and operates its water works, rebuilt at a cost of \$500,000. Pop., 1900, 28,895; 1910, 30,417; 1914 (U. S. est.), 31,367.

LACTANTIUS, lāk-tān'shī-ūs. In several manuscripts designated LUCIUS CÆLIUS (or CÆCILIUS) FIRMIANUS LACTANTIUS, an eminent Christian author, who flourished in the third and fourth centuries. He was perhaps of Italian descent, but studied at Sica in Africa, under the rhetorician Arnobius (q.v.). About 300 he settled as a teacher of rhetoric in Nicomedia.

LACROSSE AND SCULLING



He was invited to Gaul by Constantine the Great (312-318 A.D.), to act as tutor to his son Crispus, and is supposed to have died at Treves about 325 or 330. Lactantius' principal work is his *Divinarum Institutionum Libri VII*, an introduction to Christianity, a production of both a polemical and an apologetic character. The first three books criticize heathen views; the last four maintain that apart from Christianity true wisdom and true virtue are not to be found. In his middle and later life he was an ardent Christian, and a bitter opponent of the paganism in which he had been brought up, but his tendencies seem to have been towards Manichaeism and certain views held as unorthodox by the Church. Among his other writings are treatises, *De Ira Dei* and *De Mortibus Persecutorum* (the latter, however, may be from another's hand). Some elegies have also been ascribed to him, but erroneously. His style is remarkable and has deservedly earned for him the title of the *Christian Cicero*. He was, besides, a man of very considerable learning, but, as he appears not to have become a Christian till he was advanced in years, his religious opinions are often very crude and singular. Lactantius was a great favorite during the Middle Ages. The *editio princeps* of this writer is one of the oldest extant specimens of typography (Subiaco, 1465). His works are published in Migne, *Patrologia Latina*, vols vi and vii (Paris, 1844), and Laubmann and Brandt, *Corpus Scriptorum Ecclesiasticorum Latinorum* (Vienna, 1890). There is an English translation by Fletcher in the series of the Ante-Nicene Fathers, vol vii (1896). Consult Schanz, *Geschichte der römischen Literatur*, vol iii (2d ed., Munich, 1905).

LACTARIN, lak'tā-rin. See CASEIN.

LACTASE. See ENZYME

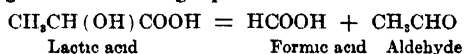
LACTATES. See LACTIC ACID.

LACTEAL (from Lat. *lacteus*, milky, from *lac*, Gk. γάλα, *gala*, milk), or **CHYLIFEROUS VESSEL**. One of the lymphatic (q.v.) vessels of the small intestine, which absorb or take up the chyle. They were discovered in 1622 by Aselli (q.v.) and received their name from conveying the milklike product of digestion, the chyle (q.v.), during the digestive process, to the thoracic duct (q.v.), by which it is transmitted to the blood. These vessels commence in the intestinal villi and, passing between the layers of the mesentery (q.v.), enter the mesenteric glands and finally unite to form two or three large trunks, which terminate in the thoracic duct.

LACTIC (from Lat. *lac*, milk) **ACID**. A name applied to several organic acids having the composition corresponding to the formula $C_3H_5O_3$.

1. *Ordinary lactic acid*, or ethylidene-lactic acid, $CH_3CH(OH)COOH$, is a characteristic constituent of sour milk, in which it was discovered by Scheele in 1780. It really consists of a mixture, or compound, of equal quantities of sarcolactic and levulactic acids, which are described below. It is formed, in general, whenever sugar or starch undergoes lactic fermentation in the presence of decaying nitrogenous matter, or when sugar is heated with alkalis. It is found in the stomach and intestines as well as in the brain and in muscles. It may be readily prepared by keeping a mixture of cane-sugar solution and sour milk, to which a little decaying cheese and some chalk have been added, for two weeks at a temperature of about 40° C.

(104° F.). The transformation is caused by the activity of the so-called *lactic ferment* (*Bacillus lacticus* Huepffel), and as this activity ceases as soon as the medium becomes strongly acid, chalk must be added to neutralize the lactic acid produced. Further, the process must not be kept up too long, as another fermentation may set in, by which the lactic acid would be transformed into butyric acid. Lactic acid has been obtained perfectly pure by distillation under very low pressure. It forms colorless, hygroscopic crystals melting at 18° C. (64.4° F.). The ordinary pharmaceutical product is an aqueous solution containing about 75 per cent of lactic acid. It has been used, in diluted form, to dissolve the membrane in diphtheria and as an ingredient of stomachic mixtures. Chemically lactic acid, or rather each of its constituents, is at once an acid and a secondary alcohol, its molecule containing both a carboxyl group ($COOH$) and a secondary alcohol group ($CHOH$). It is a comparatively unstable substance, and when heated with dilute sulphuric acid readily decomposes into formic acid and ordinary aldehyde, according to the following equation:

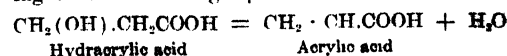


Among the salts of lactic acid may be mentioned the lactate of calcium, $(C_3H_5O_3)_2Ca + 5H_2O$, and the lactate of zinc, $(C_3H_5O_3)_2Zn + 3H_2O$, which are readily soluble in hot water and almost insoluble in cold alcohol. A method of separating the different varieties of lactic acid is based on the different solubilities of their zinc and calcium salts.

2. *Sarcolactic acid*, or paralactic acid, is found in blood, and under certain conditions in urine, as well as in various pathological fluids, it is a characteristic constituent of muscles and is therefore contained in considerable quantities in Liebig's meat extract. Sarcolactic acid possesses considerable importance from a physiological point of view. The energy of an active muscle is found to be proportional to the acidity of the muscle; and as that acidity is due to a great extent to the formation of sarcolactic acid, it is clear that the production of muscular energy is due largely to the transformation of nitrogenous matter into sarcolactic acid. Sarcolactic acid has precisely the same chemical properties as ordinary lactic acid, from which it differs, however, in certain physical properties, unlike ordinary lactic acid, it is optically active, turning the plane of polarized light to the right, the solubility of its zinc and calcium salts is different from that of the lactates. Sarcolactic acid may be prepared from Liebig's meat extract. The fact that it forms one-half of ordinary lactic acid has already been mentioned.

3. *Lavorotatory-lactic acid* may be obtained from ordinary lactic acid, of which it forms one-half, by subjecting the strychnine salt of the latter to a process of fractional crystallization. The relation between the above three varieties of lactic acid is explained by the theories of modern stereochemistry (q.v.).

4. *Ethylene-lactic acid*, or β -hydroxy-propionic acid, $CH_3(OH).CH_2.COOH$, often called *hydraerylic acid*, is a sour, sirup liquid readily breaking up into acrylic acid and water, according to the following equation:



Hydracrylic acid was formerly supposed to occur in the animal body, but this has been shown to be incorrect.

LACTIC FERMENTATION. See FERMENTATION; LACTIC ACID.

LACTOglobULIN. See GLOBULINS.

LACTOLASE. See ENZYME

LACTOMETER (from Lat. *lac*, milk + Gk. μέτρον, *metron*, measure). A special form of hydrometer (q.v.) used for determining the specific gravity of milk, for the purpose of detecting adulteration with water. Experience has shown that the specific gravity of mixed milk from healthy cows, when taken at least 12 hours after milking, will not fall below 1.029. However, the lactometer test alone is far from being reliable. See MILK ADULTERATION.

LACTOSE. See SUGARS.

LACTUCARIUM (Neo-Lat., from Lat. *lactuca*, lettuce, from *lac*, milk). A drug consisting of the concrete juice of the *Lactuca virosa* (natural order Compositæ), or lettuce. It appears in the market in two forms. The English lactucarium is in irregular pieces the size of a pea, while the German variety is in pieces about 1 inch by ½ inch in measurement. It is dark brown or light yellowish brown, with a faintly narcotic odor and bitter taste. The chief constituents of lactucarium are lactucon, lactucin, and lactucic acid. It owes its efficiency to a crystallizable bitter principle, lactucin, probably first discovered by Abergier. It is a very feeble antispasmodic and hypnotic. It has been called lettuce opium and in the form of sirup was once popular. There is also an official tincture of the drug.

LACUNAR (Lat. *lacunar*, panel, from *lacuna*, pit, from *lacus*, lake). A sunken panel or coffer in a ceiling or in the soffit of a classic cornice. The ceiling of the Parthenon portico affords examples of the lacunar in antiquity. The ceilings of many Christian churches were so decorated during the Renaissance—as, e.g., the gilt ceiling of Santa Maria Maggiore in Rome. The word is synonymous with caisson, but some authorities restrict its use to panels in horizontal ceilings, employing coffer and caisson to designate sunken panels in vaults, arches, and domes, as in the Pantheon at Rome or the Arch of Titus. Lacunars are seldom found except in Roman, Renaissance, and modern neo-classic buildings.

LACUS BENACUS. See GARDA.

LACUS LARIUS. See COMO, LAKE.

LACUS LEMANUS, or **LEMANUS.** See GENEVA, LAKE.

LACUS LUCRINUS. See LUCRINO, LAKE.

LACUS NEMORENSIS. See NEMI.

LACUS SEVINUS. See ISEO, LAKE.

LACUS VERBANUS, or **VERBANUS.** The ancient name of the lake now known as Lago Maggiore. See MAGGIORE, LAKE.

LACY, lă'sé, FRANZ MORITZ. An Austrian field marshal. See LASCY, FRANZ MORITZ.

LACY, HUGH DE (?-1186). One of the English conquerors of Ireland. He was probably a son of Gilbert de Lacy and before 1163 was in possession of his father's estates. In October, 1171, he went over to Ireland with Henry II and soon was playing an important rôle. He received the grant of Meath and was also in charge of Dublin Castle. While Governor of Ireland, he was accused of seeking to become King of Ireland, having married in 1181 the daughter of Roderic, King of Connaught. But

whatever his intentions were, before they could be realized he was murdered by a native (July 25, 1186).

LACY, JOHN (?-1681). An English actor and playwright. He began his London life in 1631, as apprentice to John Ogilby, a dancing master, held a commission in the Royalist army during the Civil War; after the Restoration became a favorite actor; played Teague in Howard's *Committee* and was the original Bayes in Buckingham's *Rehearsal* (1671). His experiences as soldier he turned to good account in *The Old Troop*, a farce. Consult his *Dramatic Works* (London, 1875), with memoir and notes.

LADAKH, lá-dák'. A district in the east-central part of Kashmir (q.v.), British India, forming part of the upper valley of the Indus, between the Western Himalayas and the Karakorum Range (Map: India, C 1). The area of Ladakh proper is about 8000 square miles, but the name is applied to a wider region. Pop., (with Mansir), 1911, 186,656. The whole district is highly elevated, ranging from 9000 to 14,000 feet, and is crossed by a number of lofty mountain spurs, with narrow valleys between them. The air is very dry, and the climate is severe, with great variations in temperature. Good crops of wheat, barley, millet, and buckwheat are raised. The mineral products are sulphur, iron, borax, silver, and gold; woollen manufactures are important. The transit trade is extensive, being carried mostly on mules and sheep. The capital is Leh. Ladakh was originally a province of Tibet, after which it was for a time independent until 1839, in which year it was annexed to Kashmir. Consult Sir Francis Edward Younghusband, *Kashmir* (London, 1911), and Arthur Neve, *Thirty Years in Kashmir* (New York, 1913).

LADAKHI, lá-dák'hé. The natives of Ladakh. They are reputed to be peaceful and industrious. Some of their settlements are 14,000 feet above sea level. Their dress is peculiar in several respects, and their women paint their faces in Indian fashion. They speak an Aryan dialect closely related to Kashmiri, but are thought by some authorities to have a large strain of Mongolian blood. The Ladakhi are Buddhists, with an interesting folk religion behind the adopted one. The folk poetry of the Ladakhi is extensive. A brief collection of Ladakhi proverbs has been published by Rev. H. Kranke, a missionary at Leh, in the *Journal of the Asiatic Society of Bengal* for 1900. Consult K. E. von Ujfalvy, *Les Aryens au Nord et au Sud de l'Hindou-Kouch* (Paris, 1896), and A. H. Francke, "A Language Map of West Tibet," with notes, in *Asiatic Society of Bengal, Journal*, vol. lxxiii (N. S., Calcutta, 1904).

LADAS (Lat., from Gk. Λάδας). A swift runner of Laconia, of the fifth century B.C., whose speed became so proverbial that he is frequently mentioned by both Greek and Roman writers. Consult Gardiner, *Greek Athletic Sports and Festivals* (London, 1910).

LADD, GEORGE TRUMBULL (1842-). An American psychologist and philosopher, born at Painesville, Ohio. He graduated from Western Reserve University in 1864 and from Andover Theological Seminary in 1869, occupied pastorates until 1879, was professor of philosophy at Bowdoin College for two years, and from 1881 until his retirement in 1905 held the chair of philosophy at Yale. Upon the invitation of the Imperial Educational Society and of the Univer-

sity of Tokyo, he lectured in Japan in 1892 and 1899; in 1899-1900 he lectured in India and in 1907 in Honolulu. In the latter year also he was the guest and unofficial adviser of Prince Ito in Korea. Numerous honors were conferred on him at home and abroad—he was decorated with the Order of the Rising Sun (third and second class), received honorary degrees from Western Reserve and Princeton, and was president of the American Psychological Association in 1893 and a vice president of the American Association for the Advancement of Science in 1911. His writings include, besides a translation of Lotze's *Outlines of Philosophy* (6 vols., 1887): *Principles of Church Polity* (1881); *Doctrine of Sacred Scripture* (2 vols., 1884); *Practical Philosophy* (1885); *Elements of Physiological Psychology* (1887; new ed., with R. S. Woodworth, 1911); *What is the Bible?* (1888); *Introduction to Philosophy* (1890); *Outlines of Physiological Psychology* (1891); *Psychology, Descriptive and Explanatory* (1894); *Philosophy of Mind* (1895); *Philosophy of Knowledge* (1897); *Outlines of Descriptive Psychology* (1898); *Primer of Psychology* (1898); *Essays on the Higher Education* (1899); *A Theory of Reality* (1899); *Philosophy of Conduct* (1902); *Philosophy of Religion* (2 vols., 1905); *In Korea with Marquis Ito* (1908); *Knowledge, Life, and Reality* (1909); *Rare Days in Japan* (1910); *Teacher's Practical Philosophy* (1911); *What Can I Know?* (1914); *What Ought I to Do?* (1915).

LADD, WILLIAM (1778-1841). An American philanthropist and peace advocate, born in Exeter, N. H. After graduating at Harvard (1797), he took to the sea and came to be known as a capable New England captain. A disbeliever in war for any purpose, he turned landsman at the outbreak of the War of 1812 and devoted both tongue and pen to preaching nonresistance. He was president of the American Peace Society, editor of its organ, *The Friend of Peace*, afterward *The Harbinger of Peace*, and published separate addresses to the peace societies of Maine (1824), of Massachusetts (1825), and *An Essay on the Congress of Nations* (1840).

LADDER SHELL. See WENTLETRAP.

LADEGAST, lă'de-găst, FRIEDRICH (1818-1905). A German organ builder, born at Hochhermsdorf, near Rochlitz, in Saxony. He served an apprenticeship with his elder brother and then established himself at Weissenfels in 1846. He first became known through the cathedral organ at Merseburg, which he rebuilt in 1855. In conjunction with his son, Oskar (1856-), he built more than 150 organs, most of them of large size.

LADENBURG, lă'den-bŭrk, ALBERT (1842-1911). A German chemist, born at Mannheim and educated at Heidelberg, Berlin, Ghent, and Paris. He carried out the synthesis of the alkaloid conine (see ALKALOIDS) and published a series of brilliant and justly celebrated papers on the constitution of benzene. He wrote several works on the history of chemistry, including *Entwicklungsgeschichte der Chemie in den letzten hundert Jahren* (2d ed., 1887). His popular writings include: *Naturwissenschaftliche Vorträge in gemeinverständlicher Darstellung* (1908).

LADIES' CATHOLIC BENEVOLENT ASSOCIATION. A society of Roman Catholic women, established for the purpose of providing benefits to be paid to the families of members after death. It was organized at Titusville, Pa.,

in April, 1890, and received a charter in Erie Co., Pa. The central office of the association is at Union City, Pa., and the government is vested in a supreme council, which has jurisdiction throughout the United States. At the close of the fiscal year 1914 there were 1226 subordinate branches in existence, with a total membership of 147,025. The amount paid during the year to beneficiaries was \$1,197,040, and the total benefits disbursed since organization amounted to \$11,985,234. The charter is perpetual, and the association has no capital stock, claims being provided for on the assessment plan.

LADIES OF THE QUEEN'S HOUSEHOLD. In Great Britain these comprise the mistress of the robes, the ladies of the bedchamber, the bedchamber women, and the maids of honor. The office of mistress of the robes is of considerable antiquity. It is her duty to regulate the rotation and times of attendance of the rest of the ladies of the household, who are all subordinate to her. She has the superintendence of all duties connected with the bedchamber and the custody of the robes. On state occasions she must see that the ceremony of robing the Queen is properly performed. In public ceremonials she accompanies the Queen in the same carriage or walks immediately before her Majesty. The ladies of the bedchamber and the bedchamber women are personal attendants, ministering to the state of her Majesty. The maids of honor, of whom there are nine, are immediate attendants on the royal person, and in rotation perform the duty of accompanying the Queen on all occasions.

LADIES' TRESSES. See Colored Plate of AMERICAN ORCHIDS with article ORCHID.

LADINO, lâ-dě'nô (from Lat. *Latinus*, Latin). 1. A term of various ethnological applications, denoting the Romansch dialect and the closely related dialects spoken in the Tirol and Friuli. 2. The old Castilian language in Spain. 3. A Ili-pano-Portuguese dialect of Latin, spoken by Turkish and other Jews. 4. A name applied in the Central American States to the descendants of Latin-American fathers and Indian mothers. As in the mulattoes in the United States, their color is a blend of the two races, and the hair is wavy.

LADISLAS, lăd'is-lăş, or LADISLAUS (Hung. *László*, and for the kings of Poland and Bohemia *Ulászló*). The name of several kings of Hungary, of whom one ruled also over Poland and two over Bohemia.—**LADISLAS I THE SAINT** (died 1095) was the son of Béla I and, after acquiring fame by his victories over the Cumans, succeeded his brother Gejza as King of Hungary in 1077. He subdued the Croats (1091) and established the Christian religion among them. He forced the Cumans likewise to embrace Christianity. He died in the midst of preparations for a crusade to the Holy Land and was canonized by Pope Celestine III in 1198.—**LADISLAS IV**, surnamed **THE CUMAN**, succeeded his father, Stephen V, in 1272. He attacked the Cumans and defeated them; but, reinforced by hordes of the Nogai Tatars, they swept over Hungary in a wave of invasion (1285), and Ladislav was forced to make terms with them. He adopted some of their customs and put away his wife to marry one of their princesses. He was assassinated by a Cuman in 1290.—**LADISLAS** (*Uladiślas*), King of Hungary (1440-44) and Poland (1434-44). See **LADISLAS III**, King of Poland.—**LADISLAS VI** (V),

POSTHUMUS, King of Hungary and Bohemia. He was the posthumous son of Albert II, the third Hapsburg King of Germany, by Elizabeth, the heiress of the Emperor Sigismund, and was born in 1440. He was King of Bohemia from his birth and at the age of five was made King of Hungary. His guardian, the Emperor Frederick III (of the house of Austria), would not allow him to repair to his realms until he had reached the age of about 13 years. The great general János Hunyady (q.v.) conducted the government of Hungary during the minority of Ladislas, while in Bohemia the government passed into the hands of George Podiebrad (q.v.). Ladislas died in 1457, in his eighteenth year.—**LADISLAS** (Uladislas) VII (VI) was elected King of Hungary in 1490, 19 years after his accession to the throne of Bohemia. He died in 1516 and was succeeded by his son Louis II. His daughter Anna married Ferdinand I of Hapsburg. Consult: Szalay, *Geschichte Ungarns*, vols. i-iii (Ger. trans., Budapest, 1866-73), Horváth, *Geschichte Ungarns*, vol. i (Ger. trans., Budapest, 1876); Vámbéry, *Hungary* (New York, 1894).

LADISLAS, or **LADISLAUS** (c.1379-1414). King of Naples from 1386 to 1414, of the house of Anjou. He was the son of Charles III (of Durazzo) and on his father's death succeeded to the crown under the regency of his mother. From the beginning he was forced to contend against a faction on the nobility, led by the powerful family of Sanseverino, who set up Louis II of Anjou as a rival candidate for the throne. In 1391 Louis invaded Naples, but after eight years of warfare was driven out by Ladislas, who from an early age had evinced remarkable military talents and a restless energy. He had succeeded, besides, in gaining the support of Pope Boniface IX and winning over the Angevin party. Once freed from his rival, Ladislas turned upon the turbulent nobility and crushed them into nonresistance. He then gave his attention to foreign conquests, for which central Italy, rent by the great schism, offered a fair field. Playing both with the Pope and the people of Rome, he succeeded in inciting the populace against Innocent VII, who in 1405 was forced to flee from the city, but Ladislas' attempt to gain possession of the city failed, and in 1406 he was forced to come to terms with the Pope. In 1408 he made himself master of Rome without meeting resistance, and forced Gregory XII to sell to him for 25,000 florins the States of the Church with Rome itself. In 1409 a league was formed against him by Pope Alexander V, Florence, Siena, Bologna, and Louis of Anjou, and in the following year Ladislas was expelled from Rome. The war against the King of Naples was carried on vigorously by Pope John XXIII, whose forces, under the command of Paolo Orsini, defeated Ladislas at Roccasecca in May, 1411. The King, nevertheless, succeeded in detaching Florence from the alliance and made his peace with the Pope. This was but to gain time. In June, 1413, he took Rome and compelled John XXIII to flee. His plans for establishing a powerful Italian kingdom seemed well on the way towards realization when he was struck down by disease and died at Castelnuovo, Aug. 6, 1414. In 1403 he had been crowned King of Hungary at Zara, a title which had soon to be laid down. Consult Mandell Creighton, *History of the Papacy*, vol. i (London, 1882), and Gregorovius, *History of*

the City of Rome in the Middle Ages, vol. vi (ib., 1898).

LADISLAS, or **VLADISLAV**, vlá-dis'laf. The name of several kings of Poland.—**LADISLAS I**, surnamed **LOKIETEK** (the short) (1260-1333), was the son of Duke Casimir of Cuiavia and in 1288 made himself King of Poland with the assistance of a party among the nobility. He was compelled, however, to wage war against the Duke of Silesia and the King of Bohemia and was driven by the latter from the country. After the death of the Bohemian King Venceslas in 1305, he succeeded in making himself master of Cracow and in 1312 completely crushed his enemies, thus reuniting the Polish territories under his rule. In 1320 he was crowned King of Poland, with the sanction of the Pope. The marriage of his son Casimir with Anna, daughter of Gedimin, Prince of Lithuania, prepared the way for the union of that country with Poland.—**LADISLAS II** (1348-1434) was the son of Olgerd, Prince of Lithuania, and succeeded his father in 1377, being known before his acquisition of the Polish throne as Jagello. In 1386 he was converted to Christianity, adopted the name of Ladislas, and married Hedwig, heiress of Louis the Great, King of Hungary and Poland, ascending the throne as Ladislas II. He became the founder of a dynasty which ruled over Poland until 1572. (See **JAGELLONS**.) His efforts were directed towards preserving the union between Lithuania and Poland and extending the power of the latter country. He carried on long wars against the Teutonic knights and in 1410 gained a decisive victory over them at Tannenberg. He founded the University of Cracow in 1400.—**LADISLAS III** (1424-44) was the son of Ladislas II and succeeded his father in 1434, assuming personal charge of the government in 1439. In the following year he was elected King of Hungary, but was compelled to make good his title by force of arms against Elizabeth, widow of the late monarch, Albert II, who claimed the throne for her son, Ladislas Posthumus, born after the father's death. In 1442 he married Elizabeth, who died three days after the wedding. Under the great Hunyady (q.v.) the Hungarian armies were successful for a time in the struggle against the Turks; but at Varna, on Nov. 10, 1444, the Hungarian army was overwhelmed and the King with the greater part of his nobility perished.—**LADISLAS IV** (1595-1648) was the son of Sigismund III. In 1610 he was elected Czar by a part of the Russian nobility and took up his residence in Moscow; but his father's ambition to bring Russia under the Polish crown led to a national uprising, and Ladislas was expelled from Moscow in 1612. He succeeded his father in 1632 and carried on war with marked success against the Russians and the Turks. He sought to vindicate the royal power against the powerful nobility, but with little success. The last years of his reign were disturbed by a formidable uprising of the Cossacks under Bogdan Chmielnicki (q.v.).

LA'DLEWOOD. A South African tree. See **HARTOGIA**.

LADMIRAULT, lăd'mér'ô', **LOUIS RENÉ PAUL DE** (1808-98). A French general. He was born at Montmorillon in the Department of Rhône, entered the army in 1831, served in Africa, distinguished himself in the Italian war at Melegnano and Solferino (1859), and, as commander of the Fourth Army Corps, was or-

dered to defend the lines between Metz and Thionville, upon the outbreak of war with Prussia. He was with Bazaine in Metz and went a prisoner to Germany. On the outbreak of the Commune (see COMMUNE) Ladmirault was made commander of the troops ordered to take Paris. On May 22 he forced an entrance into the city by the Porte Saint-Ouen, the following day gained possession of the heights of Montmartre, and thence, with obstinate fighting on both sides, took possession of the city part by part. On July 1, 1871, he was made military governor of Paris. From 1876 to 1891 Ladmirault was a member of the Senate.

LADOGA, lá'dó-gá The largest lake of Europe, situated in the northwestern part of Russia, its southwest corner being 40 miles east of St. Petersburg (Map: Russia, D 2). It is bounded by Finland and the governments of St. Petersburg and Olonetz. It is 129 miles from north to south, 81 miles from east to west, 585 miles in circumference, and covers an area of somewhat over 7000 square miles. The south shore is a low, boulder-strewn region of glacial origin, while the north shore is steep with granite cliffs. The depth in the southern and central parts is less than 300 feet, while in the north it is mostly over 400 feet and occasionally reaches about 800 feet. Its water is cold, but abounds in fish. It is fed by a number of streams, the chief of which are the Svir, the outlet of Lake Onega, and the Volkhov from Lake Ilmen, and has for its outlet the Neva. Navigation on the lake is attended with considerable danger, owing to the numerous shallows, sand banks, and hidden rocks. Its position at the northern terminal of the great water system which connects the Caspian Sea with the Gulf of Finland through the Volga, and the three feeders of the Ladoga, the Volkhov, the Sias, and the Svir, gives the lake great commercial importance, and, in order to make it available for navigation, a number of canals have been constructed along its south and southeast shores. The chief of these are the Ladoga Canal, about 70 miles long (1718-31), Neva with the Volkhov, the new running parallel to the former; and the Sias and the Svir canals, connecting the mouths of these two rivers with the Ladoga Canal. These canals are navigated annually by thousands of vessels and rafts. The lake is also connected by water with the White Sea and is ice-free on the average for 191 days in the year, from May to October. The most interesting of its numerous islets are Valaam and Konevets, both occupied by monasteries, the former being among the most popular places of in Russia. The chief towns on the lake famous fortress of Schlüsselburg, at the entrance of the Neva and Novaya Ladoga, at the mouth of the Volkhov.

LADOGA STARAYA, lá'dó-gá stá-rá'yá. A town of Russia. See STARAYA LADOGA.

LADRONE (lá-drón', *Sp. prom. lá-drón'ná*)

ISLANDS, MARIANA OR MARIANNE ISLANDS. A group of islands in the Pacific Ocean, belonging, with the exception of Guam (q.v.), the southernmost and largest, to Germany (Map: Australasia, G 1). They are situated between lat. 13° N. and 21° N. and between long. 144° E. and 146° E., about 1500 miles east of the Philippines. They are disposed in a row from north to south; their number is about 16, of which eight, including Guam, are inhabited;

their aggregate area is about 440 square miles. The largest islands, next to Guam, are Saipan, Tinian, and Rota, all in the southern part of the group, those in the north being only small volcanic islets, and all of them mountainous. The climate is humid, but moderately warm and not unhealthful. The coconut and breadfruit trees are indigenous, but rice, sugar, maize, coffee, tobacco, and indigo are cultivated. The native fauna is very poor, including no mammals except a few rats and bats and hardly any reptiles or insects. All the domestic animals of Europe, however, have been imported and thrive there. The aboriginal inhabitants consisted of Chamorrios, a tribe of Micronesians; they decreased rapidly after the Spanish occupation, and Tagalogs were imported from the Philippines, who mixed with and almost supplanted the earlier race. The source of the megalithic monuments, principally found on Tinian as parallel rows of evenly spaced pillars with bowl-shaped capitals, is still in doubt; some authorities regard them as quite recent, but in general they appear to be the work of the prehistoric race in the Pacific who built so many structures. (See MEGALITHIC MONUMENTS.) In 1904 the population of the islands numbered 2646, exclusive of Guam, whose population was (1912) 12,517. They were discovered in 1521 by Magellan, who named them Ladrone (Sp., robbers) on account of the thieving propensities of the inhabitants. They were settled in 1667 by Spanish Jesuit missionaries, who called them the Mariana Islands. As a result of the Spanish-American War, the island of Guam was ceded to the United States in 1898, and the remaining islands, together with the Carolines, were sold to Germany in 1899 for 25,000,000 pesetas (\$4,875,000). During the European War which began in 1914 Japan occupied the Ladrone Islands for strategic purposes. (See WAR IN EUROPE.) The Ladrone form a division of the German New Guinea Protectorate; the seat of administration is on the island of Saipan.

LADYBIRD (*lady*, with reference to Our Lady, the Virgin Mary + *bird*, perhaps a variant of *bug*), or **LADYBUG**. A beetle of the family Coccinellidae. Ladybirds are pretty little beetles, well known to every one, often of a brilliant red or yellow color, with black, red, white, or yellow spots, the number and distribution of which are characteristic of the different species. The form is nearly hemispherical, the under-surface being very flat, the thorax and head small, the antennae are short and terminate in a club, the legs are short. When insects emit from their joints a yellowish fluid having a disagreeable smell. They and their larvæ feed chiefly on scale insects and plant lice, in devouring which they are very useful to agriculturists and fruit growers. They deposit their eggs under the leaves of plants on which the larvæ are to find their food, and the larvæ run about in pursuit of aphids. Ladybirds are sometimes to be seen in immense numbers, which, from ignorance of their usefulness, have sometimes been regarded with a kind of superstitious dread.

Ladybirds are great benefactors to the American fruit growers. An Australian ladybird (*Ve-dalia*, or *Novius*, *cardinalis*) was introduced in 1886, to feed on the cottony cushion scale of the orange and lemon groves of California, and in less than a year it practically exterminated the pest. It has since been introduced with

equal success into South Africa, Portugal, Egypt, and Italy, where it has exterminated the same scale or a congeneric species. The two-spotted ladybird (*Coccinella bipunctata*), a black beetle with two red spots, which occurs all over the United States, is also of inestimable value in protecting vegetation from plant lice and scale and other insects. One genus of ladybirds (*Epilachna*), is herbivorous and feeds on the leaves of the squash, pumpkin, melon, bean, and other plants. Consult: T. L. Casey, "Revision of the American Coccinellidae," in *Journal of New York Entomological Society* (New York, 1899); L. O. Howard, "Beneficial Work of *Hyperaspis signata*," in United States Department of Agriculture, *Division of Entomology, Bulletin* (N. S., 26, Washington, 1900); C. L. Marlatt, "Preliminary Report on the Importation and Present Status of the Asiatic Ladybird," in *United States Department of Agriculture, Division of Entomology, Bulletin* (N. S., 37, ib., 1902), id., "Predatory Insects which Affect the Usefulness of Scale-Feeding Coccinellidae," in *United States Department of Agriculture, Division of Entomology, Bulletin* (N. S., 37, ib., 1902). See Colored Plate of INSECTS.

LADY BOUNTIFUL. In Farquhar's *Beaux' Stratagem*, an old gentlewoman with benevolent instincts, who devotes herself to the curing of maladies. The name is used, sometimes with the added idea of condescension, to denote a woman who dispenses relief or favors in a community.

LADY CHAPEL. A chapel dedicated to the Virgin Mary (Our Lady). It was generally an elongation of the choir eastward of the church, directly behind the high altar, or at the end of the aisles of the choir. In a number of important cases, however, it was a detached building, though connected by a passage with the choir, as at Gloucester. In either case it was often the most richly decorated part of the church. Its use was most extensive in England, where nearly all the cathedrals and great abbey churches had lady chapels. Henry VII's chapel at Westminster was originally designed to be the lady chapel of that abbey. A very beautiful French example is the lady chapel of the church of St. Germer-de-Fly. That of the cathedral of St. Patrick at New York is a notable American example.

LADY CRAB. A local name of the large edible crab (*Callinectes hastatus*) of the American Atlantic coast, due to the dim outline on its back of a woman's head and shoulders. As other crabs (notably *Platyonchus ocellatus*) are similarly marked, they have also received the same name. See CRAB.

LADY DAY. In England, the feast of the Annunciation of the Virgin Mary. It occurs on the 25th of March and has by custom become one of the regular quarter days on which rent is generally made payable.

LADY FERN (*Asplenium filix-femina*). A beautiful fern common in moist woods in Europe and North America, with bipinnate fronds sometimes 2 feet long. The whole plant has an extremely graceful appearance. It is said to possess the same antihelmintic properties as the male fern (*Aspidium filix-mas*).

LADYFISH. A shapely and very beautiful fish (*Albula vulpes*), representing alone the family Albulidae, allied to the tarpons and moon-eyes and found in all tropical seas. It is 1½ to 3 feet long and is brilliantly silvery, faintly streaked, and becoming olivaceous along the

back. In Bermuda and the West Indies it is called bonefish or banana fish and sold for food, although not very good. Gilbert says that the young pass through a metamorphosis analogous to that of conger eels. For a period they are elongate, band-shaped, and have very small heads and loose, transparent tissues. Afterward they gradually become shorter and more compact. This fish is very common in the Gulf of California.

LADY OF ENGLAND. A name given to Matilda, daughter of Henry I and mother of Henry II.

LADY OF LYONS, THE. A play by Bulwer-Lytton (1838). The play was originally called *The Adventurer* and was suggested by a story called *The Bellows-Mender*.

LADY OF MERCY, ORDER OF OUR. A Spanish order founded in 1223 by Pedro Nolasco, the tutor of James I of Aragon. (In the order's chronicles the date is given as 1218.) Sometimes called in the early days the Order of St. Eulalia. In 1235 Gregory IX approved the order, which was instituted to redeem Christian captives from among the Moors; each knight at his inauguration vowing that, if necessary for their ransom, he would remain himself a captive in their stead. In 1318 dissensions arose in the order, and a part of the knights joined the Order of Montesa. The order extended to Italy, France, Ireland, and Africa, and, abandoning its original purpose, became a missionary order, especially in South America. A third order for women was founded in 1265 and extended later to South America, Ireland, and South Africa. Some of the sisters did excellent services as nurses at Mafeking during the Boer War. Consult Heimbucher, *Orden und A. . . .* vol. ii (Paderborn, 1907).

LADY OF MONTESA, mōn-tā'sà, ORDER OF OUR. An Aragonese order founded by King James of Aragon, who had urged Pope Clement V to allow him to employ all the estates which had belonged to the Templars within his territory for the benefit of this new knightly order intended to protect Christians against the Moors. His request was acceded to by the following Pope, John XXII, in 1316, who granted him for this purpose all the estates of the Templars and of the Knights of St. John situated in Valencia. Out of these was founded the new order, which King James named after the town and castle of Montesa, which he assigned as its headquarters. In 1399 the Order of St. George of Alfama was united to Montesa. In 1587 the crown became grand master. The order was abolished in 1872, but reinstituted in 1874. The order is now conferred merely as a mark of royal favor, though the provisions of its statutes are still nominally observed in new creations. The badge is a red cross, edged with gold; the costume, a long white woolen mantle, decorated with a cross on the left breast. Consult Heimbucher, *Orden und Kongregationen*, vol. ii (Paderborn, 1907).

LADY OF SHALOTT', THE. The heroine of a poem of the same name by Tennyson (1832).

LADY OF THE AROOSTOOK, à-rōō's'tuk, THE. A tale by W. D. Howells, originally published in the *Atlantic* in 1878-79.

LADY OF THE LAKE, THE. A poem by Sir Walter Scott (1810). This is the most popular of Scott's long narrative poems. It took its name from the heroine, Ellen Douglas, whose home is on an island in Loch Katrine.

LADY OR THE TIGER? THE. A short story by F. R. Stockton (1884), which gained great popularity from the unsolved problem presented at its close. The title has become a common phrase denoting a dilemma.

LADY'S FRIEND. The name given to an officer of the House of Commons who was charged with the duty of protecting the interests of a wife against whom a divorce bill was pending in Parliament, by seeing that no bill of divorce passed until provision by alimony had been made by the husband. The office became obsolete in 1857, on the transfer of the practice of granting divorces from Parliament to the courts of justice.

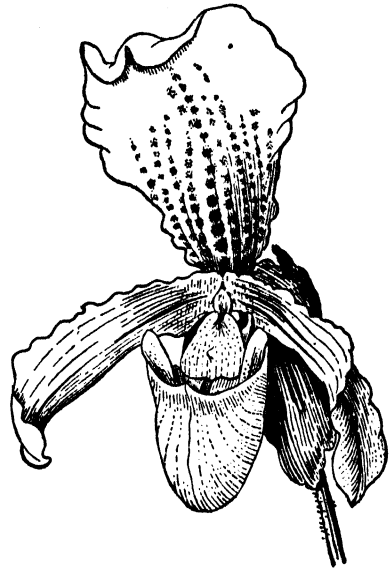
LADY'S-MANTLE (mantle of Our Lady; so called from the shape of the leaves), *Alchemilla*. A genus of herbaceous plants of the family Rosaceae. The common lady's-mantle (*Alchemilla vulgaris*) is abundant on banks and in European pastures. Its root leaves are large, plaited, many-lobed, and serrated; its flowers, in corymbose terminal clusters, usually yellowish green. Still more beautiful is the Alpine lady's-mantle (*Alchemilla alpina*), which grows on mountains and has digitate serrated leaves, white and satiny beneath. A common European plant of very humble growth and unpretending appearance, field lady's-mantle, or parsley piert (*Alchemilla arvensis*), found in pastures and introduced into the eastern United States, is an astringent and diuretic, said to be sometimes useful in cases of stone in the bladder by producing a large secretion of lithic acid. It is, however, not official.

LA'DYSMITH. A town and capital of a district of the same name in the Province of Natal, South Africa, on the Klip River, 189 miles west-northwest of Durban, at the junction of two railways entering the Transvaal and Orange River colonies (Map: Africa, H 7). Pop., 1911, 5340. Prior to the Transvaal War of 1899-1902 it was chosen as a depot for military stores and supplies—a choice which has been condemned as a strategical error and which considerably prolonged the war. In its defense 9000 English troops under General White sustained a siege of 118 days from Nov. 2, 1899, until relieved by General Buller on Feb. 28, 1900. It has large railway shops, a good water supply, and electric light.

LADYSMITH. A city in the Nanaimo District, Vancouver Island, British Columbia, Canada, on Oyster harbor, east coast of Vancouver Island, and on the Esquimalt and Nanaimo Railway, 18 miles by rail southeast by south of Nanaimo (Map: British Columbia, D 5). The Canadian Pacific Railway ferries freight trains to Ladysmith from Vancouver, and the trains are transferred to the Esquimalt and Nanaimo Railway. The industrial establishments include a copper smelter, stove works, brewery, boat-building works, shingle mill, and aerated-water works. The Extension Coal Mines are located near Ladysmith. The city owns its electric-lighting plant and water works. Pop., 1911, 3295.

LADY'S-SLIPPER, or MOCCASIN FLOWER (so called from the shape of the labellum), *Cypripedium*. A genus of plants of the family Orchidaceae, of wide distribution throughout the temperate parts of the globe, except Africa and Australia. *Cypripedium insigne* is a native of Nepal; *Cypripedium debile* of Japan; *Cypripedium calceolus* of Europe, where it is the only

species. In North America there are about 10 species, of which *Cypripedium hirsutum*, the showy lady's-slipper, a plant 2 feet high, is the most conspicuous, and *Cypripedium acaule*, the stemless or pink lady's-slipper, is the most common. The species of *Cypripedium* are terres-



A FLORIST'S LADY'S-SLIPPER.
(*Cypripedium insigne*.)

trial plants, in distinction from the tropical epiphytes. There are about 20 species or more, and numerous hybrids, some of which have flowers of great beauty. They are of easy and extensive cultivation. See Plate of MONOCOTYLEDONS, and Colored Plate of ORCHIDS, AMERICAN.

LADY'S-SMOCK. See CRESS.

LAËKEN, lä'ken. A town of Belgium, a suburb of Brussels, with which it is connected by street railways (Map: Belgium, C 4). It contains the royal palace, built in 1782, bought by Napoleon in 1806 for Josephine, and restored since the fire of 1890. He resided there for a time with Maria Louisa. In 1812 he exchanged it for the Elysée Bourbon. Afterward it became the property of Belgium and served as the residence of the royal family. On a hill outside the town is the huge memorial pile to Leopold I, with a statue by W. Gelfs. Pop., 1900, 30,438; 1910, 35,024.

LÆLAPS, læ'lāps (Neo-Lat., from Lat. *Laelaps*, name of a dog, from Gk. λαίλαψ, *laílaps*, hurricane). A fossil dinosaurian reptile. See MEGALOSAURUS.

LÆLIUS, læ'lī-ūs. 1. GAIUS, a Roman general and statesman, friend of Scipio Africanus Major. He served with success in Sicily and Africa (205). In 203 he defeated Syphax (q.v.). In 202, serving under Scipio, in command of the cavalry, he contributed largely to the defeat of Hannibal at Zama. He was consul in 190. He died after 170. 2. GAIUS, surnamed SAPIENS (the wise) (186-115 B.C.), son of 1. In early life he studied philosophy with the Stoics Diogenes and Panætius, and afterward law, taking a high rank among the orators of his time. He was the intimate friend and companion of Scipio Afri-

canus the Younger and accompanied him in his expedition into Africa, displaying great valor at the siege of Carthage (149-146 B.C.). When prætor in Lusitania, he made a successful campaign against the powerful chieftain Viriathus (q.v.). He was consul 140 B.C. At the beginning of his career he favored plans for raising the masses to become landed proprietors, but was repelled by the extravagance of the elder Gracchus. After his political career closed he spent his time in the country, partly in study and partly in rural occupations. The equanimity of his temper is noticed by Horace in the words *mitis sapientia Læli* (*Sermones*, II, 1, 72; the passage testifies also to his intimacy with Scipio Africanus Minor). The titles of many of his orations are known, but the orations have been lost. Lælius is best known as the principal speaker of Cicero's *Lælius de Amicitia* and as one of the speakers of his *De Senectute* and his *De Republica*. Consult the article "Lælius," in Lübker, *Reallexikon des klassischen Altertums* (8th ed., Leipzig, 1914).

LAEMMER, lēm'mēr, HUGO (1835-). A German divine, born at Allenstein in East Prussia. From 1852 to 1856 he studied Protestant theology at the universities of Königsberg, Leipzig, and Berlin, but afterward became a convert to Catholicism. He justified his conversion by a pamphlet, *Misericordias Domini* (1861). After 1864 he was professor of Catholic theology at Breslau. In 1882 he was made prelate prothonotary, and he lectured for many years on the history and law of the Church, becoming professor at Breslau. His publications include *Clementis Alexandrini de Logo Doctrina* (1855); *Die vortridentisch-katholische Theologie des Reformationszeitalters, aus den Quellen dargestellt* (1858), a prize essay; *Zur Kirchengeschichte des 16 und 17. Jahrhunderts* (1863); *Institutionen des katholischen Kirchenrechts* (2d ed., 1892); *De Caesaris Baronii Literarum Commercio Diatriba* (1903).

LAËNNEC, la'ën'něk', RENÉ THÉOPHILE HYACINTHE (1781-1826). A distinguished French physician, born at Quimper in Lower Brittany. He studied medicine in Nantes and in Paris, where he attended the practice of Corvisart. In 1816 he was appointed chief physician to the Hôpital Necker, and it was there that he created a rational system of diagnosis of diseases of the heart and of the lungs, by adding the art of auscultation by means of the stethoscope (q.v.) of his own invention to the method of percussion discovered by Auenbrugger. In 1823 he was appointed professor of medicine in the Collège de France. In 1819 he published his *Traité de l'auscultation médiate* (4th ed., 1836), which has probably done more to advance the art of diagnosis than any other single book. Consult Saintignon, *Laennec, sa vie et son œuvre* (Paris, 1904).

LAER, lār, PIETER VAN. See LAAR, PIETER VAN.

LAERTES, lā-ēr'tēz. 1. The son of Acrisius, husband of Anticlea and father of Odysseus, who hence bears the name Laertiades. He participated in the Calydonian hunt and in the Argonautic expedition. 2. In Shakespeare's *Hamlet*, the son of Polonius and brother of Ophelia. He is himself wounded by the poisoned sword with which he kills Hamlet, and dies with his victim.

LÆSA MAJESTAS (Lat., injured majesty). A phrase transferred from the Roman to

the common law and denoting any offense against the king's person or dignity. The expression *crimen læsæ majestatis* is used by Glanvil as the equivalent of treason, but the offense was not clearly defined until the enactment of the statute of 25 Edw. III, upon which the modern English law of treason is based. Speaking or publishing words derogatory to the king or to the royal dignity is not a special offense in English law, but is covered by the ordinary law of libel and slander. The king has the same rights as the ordinary citizen to be protected against such offenses and no more. In certain continental countries, however, as Germany, speech or acts which show a lack of respect for the ruler are punishable summarily as *lèse-majesté*.

LÆSTRYGOES, lēs-trig'ō-nēz (Lat., from Gk. Λαιστρυγόνες, *Laistrygonēs*). A race of cannibalistic giants whom Odysseus is fabled to have met in the Farthest North in the course of his wanderings (*Odyssey*, x, 80 ff.) Odysseus escaped with but one ship; with rocks the giants sank the others. Their King, called Lamus, has been regarded as the masculine correlative to Lamia (q.v.) According to the later Greek tradition, the seat of the Læstrygonēs was at Leontini in Sicily, but the Romans supposed them to have lived at Formiæ in Latium (e.g., Horace, *Carmina*, iii, 16, 34). Consult Woermann, *Die Odyssee-Landschaften von Esquilm* (Munich, 1876), and Harrison, *Myths of the Odyssey* (London, 1882).

LÆTARE (lê-tā'rē) **MEDAL**. A gold medal presented each year by the University of Notre Dame, Indiana, to some Roman Catholic layman in recognition of distinguished services rendered by him to the cause of religion or education. It is given on Mid-Lent or Lætare Sunday, whence the name, and is an adaptation of the papal custom of conferring the golden rose (q.v.).

LA FARGE, lā'färzh', CHRISTOPHER GRANT (1862-). An American architect, son of John La Farge, born at Newport, R. I. He studied at Massachusetts Institute of Technology (1880-81) and in 1882 in the office of H. H. Richardson (q.v.). With George L. Heins (q.v.) he began practice in Minneapolis in 1883, and from 1886 to 1910, three years after Mr. Heins's death, the firm had New York as its headquarters. The designs of Heins and La Farge for the new Protestant Episcopal cathedral of St. John the Divine were accepted, but after the choir had been built general supervision was intrusted to Cram and Ferguson. (See ST. JOHN THE DIVINE, CATHEDRAL OF.) La Farge collaborated also on the church of the Blessed Sacrament, Providence, R. I.; St. Matthew's, Washington; St. Paul's, Rochester, N. Y.; the Houghton Memorial Chapel, Wellesley, Mass.; the Roman Catholic Cathedral, Seattle, Oreg.; the Packard Memorial Library, Salt Lake City; New York subway stations; buildings in the New York Zoological Park; and mausoleums. In 1910 the firm of La Farge and Morris was formed, La Farge becoming in the same year an Associate National Academician. He was also a president of the Architectural League, New York, and became a fellow and director of the American Institute of Architects.

LA FARGE, JOHN (1835-1910). One of the foremost American mural painters and decorative designers. He was born in New York, March 31, 1835, the son of a French officer who came

to America in 1806. He studied drawing with his grandfather Binase, a miniature painter, and, after receiving a liberal education, went abroad in 1856. With no intention of becoming a painter, he entered the studio of Couture in Paris, and upon his return to America went into a lawyer's office in New York. At this time he met William M. Hunt, who helped him to appreciate color as well as to overcome many technical difficulties. In 1860 he married Margaret Perry, a great-granddaughter of Benjamin Franklin. In 1876 he was engaged for the whole mural decoration of Trinity Church, Boston, which was completed in 1877. In 1878 he commenced works in glass painting and window designing and, with the assistance of Saint-Gaudens, built the King sepulchral monument at Newport, R. I. In 1886 he went to Japan and the islands of the Pacific Ocean, where he made many water-color sketches of native life and scenes. He painted in 1887 a large altarpiece, "The Ascension," in the church of that name in New York—one of his finest works. He was elected to the National Academy in 1869, was president of the Society of American Artists and of the Society of Mural Painters, was created an Officer of the Legion of Honor in 1901 and became one of the seven first members of the American Academy of Arts and Letters. He contributed extensively to the magazines. His most important published works include *Considerations on Painting* (1895), *Great Masters* (1903), *The Higher Life in Art* (1910), *Reminiscences of the South Seas* (1912). He died Nov. 14, 1910.

La Farge is one of the most influential and important figures in the development of American painting. He was one of the earliest representatives of French influence and a real pioneer in mural painting. His versatility was great. In his religious subjects he was the only American who worked in the real spirit of the old masters, but he also painted portraits, landscapes, and flowers, he worked in oil, in water color, on wood, and on glass. He has an individual style, and his technique is careful, though broad in brushwork. His color is varied, sometimes expressed with a charm that suggests all the opalescent qualities of a pearl, then again it is strong, with sharp and striking contrasts. His drawing is not always good. His greatest contribution to art, besides the mural paintings, is his successful experiments in the manufacture and designing of stained glasses. They were epoch making in American art—the first work of the kind produced in the United States—and were distinguished by peculiar opalescent qualities.

Among the best of his canvases, besides those already mentioned, are "Christ and Nicodemus," Trinity Church, Boston; "The Three Kings," Boston Art Museum; "The Muse of Painting" and a Samoan landscape, in the Metropolitan Museum, New York; "The Arrival of the Magi," Church of the Incarnation, New York. Among his great mural decorations are those of the Brick Church, New York; Congregational Church, Newport, R. I.; the Church of the Paulist Fathers, New York; and, perhaps most important of all, the decorations of the lunettes of the Supreme Court room of the Minnesota State Capitol at St. Paul. His works in glass include: "The Infant Samuel," Judson Memorial Church, New York; "The Old Philosopher," Crane Memorial Library, Quincy, Mass.; a circular mosaic window in the Second Presbyterian Church, Chi-

cago; Watson memorial window, Trinity Church, Buffalo; "Battle Window," Memorial Hall, Harvard University; "Paul Preaching at Athens," in the choir of Columbia University Chapel; and the "Peacock Window," in the Worcester (Mass.) Museum. Consult: C. H. Caffin, *American Masters of Painting* (New York, 1892); Waern, *John La Farge: Artist and Writer* (London, 1896); Samuel Isham, *History of American Painting* (New York, 1905); E. L. Cary, *International Studio*, vol. xxxviii (ib., 1909); Royal Cortissoz, *John La Farge: A Memoir and a Study* (ib., 1911).

LAFARGE, MARIE CHAPELLE (1816-52). A Frenchwoman who was a victim of circumstantial evidence. Her conviction as a poisoner (1830) was a public scandal for the virulence of the prosecution, the contradiction of expert testimony, the prejudice of the judge, and the failure of the police to arrest a proved knave, who alone could have profited by the death. Lafarge was sentenced to imprisonment for life. In prison she wrote *Mémoires* (1841). She wrote also *Heures de prison* and *Une femme perdue*, a drama, both in a spirit of melancholy resignation. She was pardoned in 1852, but soon died of the effects of her imprisonment.

LAFARGUE, la'farg', PAUL (1842-1911). A French Socialist, born at Santiago, Cuba. He studied medicine in Paris and in London, where he met Karl Marx (q.v.), whose daughter he married. He was a member of the International Workingmen's Association (q.v.), participated in the Paris Commune of 1871, and fled to Spain and Portugal. After the amnesty of 1880 he returned to France, where with Jules Guesde (q.v.) he organized Marxian Socialism. His journalistic agitation and revolutionary propaganda brought him into conflict with the authorities, and he was imprisoned in 1883 and 1891. On the latter occasion he was elected deputy to the Assembly for Lille while still in prison, but failed of reelection in 1893. He opposed the Jaurès faction who approved of the entrance of Socialists into the Waldeck-Rousseau cabinet of 1899. Lafargue believed that old age and failing physical forces were sufficient justification for taking one's own life, and on Nov. 25, 1911, after careful preparations he, together with his wife, committed suicide. He is author of *Le matérialisme économique de Karl Marx* (1884); *Cours d'économie sociale* (1884); *Le droit à la paresse* (1887); *The Evolution of Property from Savagery to Civilization* (1891, new ed., 1905); *Le socialisme utopique* (1892); *Le communisme et l'évolution économique* (1892); *Le socialisme et la conquête des pouvoirs publics* (1899); *Les trusts américains* (1903); *Le déterminisme économique de Karl Marx* (1909).

LA FARINA, la fá-ré'ná, GIUSEPPE (1815-63). An Italian statesman and historical writer, born at Messina, July 20, 1815. He displayed great precocity in his youth and received the degree of doctor of laws from the University of Catania at the age of 19. Trained for the law, he gave much of his time to literature and became active in the secret revolutionary movement. In 1837 he was implicated in revolutionary disturbances in his native city and fled from Sicily. In 1838 he returned, began practice as a lawyer, and started several political journals, which were all successively suppressed. In 1841 he removed to Florence, where he published several historical works. In 1848 La Farina

took a prominent part in the movement in Tuscany, where he edited the first democratic and antipapal journal, the *Alba*. He then returned to Sicily and was elected a member of Parliament, and on the deposition of the Bourbons was dispatched by the provisional government on a mission to Rome, Florence, and Turin. On his return to Palermo he discharged the duties of Minister of Public Instruction, of Public Works, and of the Interior. After the suppression of the Sicilian revolution in 1849, La Farina lived in France and Turin and returned only when Garibaldi's famous expedition liberated Sicily from the Bourbon rule (1860). In the intervening time he advocated union under the house of Savoy, even before Cavour, and was the secretary of the National Italian Society, of which Pallavicino was president and Garibaldi vice president. When the War of 1859 gave the propaganda of the society over to the Sardinian government, La Farina was employed by Cavour as a royal commissioner in the provinces. After the Peace of Villafranca he reorganized the National Society, at first with Garibaldi as president, and then with himself in the chief place. Like Garibaldi and Manin, he was a Republican by conviction, but he regarded the unity of Italy as more important than the particular form of government. In 1860 he was sent to Palermo by Cavour as the representative of Victor Emmanuel. There he antagonized Crispi and the Republicans. From 1861 till his death he represented Messina in the Italian Parliament. He died in Turin, Sept. 5, 1863. Of his works the most important is *Storia d'Italia dal 1815 al 1850* (1851-52; 2d ed., 1860). Others deserving mention are: *Studi sul secolo XIII* (1841); *Storia d'Italia, della discesa dei Longobardi, narrata al popolo* (1841 et seq.); *Storia della rivoluzione siciliana nel 1848 e 49* (1851). He also wrote dramas and tales. His *Epistolario* (1869) and *Scritti politici* (1870) were edited and published at Milan by Ausonio Franchi.

LAFAYETTE, là-fà-yét'. A town and the county seat of Chambers Co., Ala., 47 miles northwest of Columbus, Ga. on the Central of Georgia Railroad (Map: Alabama, D 3). Lafayette College (q.v.) was opened here in 1885. The town is of importance as a distributing centre and has a considerable trade in cotton. The town owns the water works and electric-light and ice plants. Pop., 1900, 1629; 1910, 1632.

LAFAYETTE. A city and the county seat of Tippecanoe Co., Ind., 74 miles by rail northwest of Indianapolis, on the Wabash River, and on the Cleveland, Cincinnati, Chicago, and St. Louis, the Lake Erie and Western, the Chicago, Indianapolis, and Louisville, and the Wabash railroads (Map: Indiana D 4). It is the seat of Purdue University (q.v.) and has a public library, a fine high school, courthouse, city hall, St. Elizabeth and Home hospitals, St. Joseph's Orphan Asylum, Wabash Valley Sanitarium, Indiana State Soldiers' Home for both veterans and their wives, several monuments, the beautiful Columbian Park, and several handsome church edifices. There are foundries and machine shops, breweries, soap factories, lumber mills, carriage works, flour mills, large steering gear, automobile truck, electric meter and transformer, automobile accessory, and cardboard factories, an agricultural implement plant, iron and wire works, and many other industrial es-

tablishments. The government is administered by a mayor, elected every four years, and a unicameral council, which elects the school trustees. The city clerk and treasurer are chosen by popular election, and the boards of health and of public works and the comptroller are appointed by the mayor. The water works are owned by the municipality. Pop., 1900, 18,116; 1910, 20,081; 1914 (U. S. est.), 20,896. Lafayette is a few miles northeast of the site of the old French fort, Post Oniatanon, built in 1720, the first military post established in the Wabash valley or probably in Indiana. It was surrendered to the English in 1760 and in the same year (June 1) was captured by the Indians. Seven miles north of Lafayette General Harrison defeated the Indians on Nov. 7, 1811, in the famous battle of Tippecanoe (q.v.). First permanently settled in 1820, Lafayette was laid out in 1826 and was incorporated in 1854.

LAFAYETTE. A fish. 1. The harvest fish (q.v.). 2. The spot (q.v.). This name was applied to this fish in the neighborhood of New York, because it first became well known about the time of the visit (1824) of the Marquis de Lafayette, but has long disappeared from popular use.

LAFAYETTE, or **LA FAYETTE**, MARIE JEAN PAUL YVES ROCH GILBERT DU MOTIER, MARQUIS DE (1757-1834). A French general and statesman, and one of Washington's most faithful officers during the American Revolution. He was descended from an ancient family of Auvergne and was born Sept. 6, 1757, in the castle of Châteauneuf in the Department of Haute-Loire. He was killed at Minden in 1759, and in 1770 his mother also died, leaving him in possession of large family estates. In 1774 Lafayette married and in the same year entered the army. At the first news of the American Revolution Lafayette was seized with enthusiasm for the cause of the colonists. Evading the vigilance of the government officials, he fitted out a ship, and, sailing from Passages in Spain, landed on April 24, 1777, at Georgetown, S. C., with 11 companions, among them Baron de Kalb. His arrival in America did much to give new hope to the supporters of the Revolutionary cause, whom the ill success of the preceding campaign had greatly discouraged. On July 31, 1777, Congress bestowed on him the rank of major general, and he was soon after attached to the staff of General Washington, who speedily came to regard the young volunteer with the deepest affection and esteem. In the battle of Brandywine (Sept. 11, 1777) he was wounded while rallying the American troops. In December he was appointed to the command of an army destined for the invasion of Canada; but the expedition was abandoned for lack of resources, and Lafayette rejoined General Washington at Valley Forge in April, 1778. On the night of May 19 he was surprised by General Grant with a force of 5000 men, more than twice his own, at Barren Hill, some 12 miles from Valley Forge, but effected his retreat with the utmost skill. He fought brilliantly under Lee at Monmouth (June 28) and in August commanded with Sullivan and Greene the land expedition dispatched to cooperate with the French fleet in an attack on Newport. On the breaking out of war between France and England, Lafayette sailed for his native country (January, 1779), and it was largely through his exertions that the King dispatched a land force as well as

a fleet to the aid of the Americans. In May Lafayette was back in service and was stationed with a corps of observation on the Hudson. He was a member of the court-martial that condemned Major André to death. In February, 1781, he was sent with 1200 New England troops to operate against Benedict Arnold in Virginia, and later, when the British strength in Virginia was increased by the arrival of Cornwallis at Petersburg with 5000 troops (May 20), Washington showed his confidence in Lafayette by continuing him in the command. On May 24 Cornwallis set out from Petersburg in pursuit of Lafayette, who was stationed near Richmond. "The boy cannot escape me," said Cornwallis. The "boy" retreated rapidly to the Rappahannock, effected a junction with 1000 Pennsylvanians under Wayne, and, reinforced by the militia from the mountains, offered Cornwallis battle near Albemarle. Cornwallis retreated to Richmond, and then to Williamsburg, with Lafayette at the head of 4000 men in pursuit. On July 6, he came in touch with the British at Green Springs; but the action was indecisive, and Cornwallis continued his retreat—to Yorktown. On the day after Cornwallis' surrender Lafayette was publicly thanked by Washington. In December, 1781, he sailed from Boston for home. On a visit to North America in 1784, after the conclusion of peace, he was received with tremendous enthusiasm.

After his return to France he devoted himself to improving the position of the French Protestants. His liberal views as displayed in the National Assembly in 1789 displeased the court, and he lost his rank as field marshal. He took an active part in the proceedings of the Assembly, of which he was vice president for some time. On the day after the storming of the Bastille he was made commander in chief of the National Guard in Paris. He perfected the organization of the National Guard throughout France and brought about the adoption of the tricolor, and on Oct 5 and 6, 1789, when the King and the royal family were escorted back to Paris by the people, Lafayette accompanied them for their protection.

His popularity increased when he refused the command of the Garde Nationale in 1790, and it seemed for some time as if Lafayette held the destinies of France in his hand. With Bailly he founded, in 1790, the Club of the Feuillants (q.v.), representing the conservative element in the Constituent Assembly, whose efforts were directed towards the establishment of a constitutional monarchy. Upon the flight of the King in June, 1791, he gave orders for his arrest; but his popularity vanished shortly afterward, when he ordered the soldiers to shoot upon the people on the Champ de Mars. He took part, however, in the proclamation of the constitution in the autumn of 1791, but tendered his resignation as commander of the National Guard soon after. In November, 1791, he was defeated for the office of mayor of Paris by Pétion, his failure being due to the opposition of the extreme Republicans and to the treachery of the court. He joined with the party of the Gironde in demanding war against Austria and Prussia and on the outbreak of war received the command of the army of Ardennes, with which he won the first victories of Philippeville, Maubeuge, and Florennes. Nevertheless the attacks of the Jacobins rendered his position precarious. The storming of the Tuileries by the

people in June, 1792, disappointed him deeply, and he left the army to return to Paris to protest against the excesses of the populace, but found his influence gone and his life in danger. He was accused of treason and acquitted, but soon after commissioners were dispatched to seize him at the head of the army with which he intended to free the King and reestablish the constitution. He fled to Flanders and on Aug. 19, 1792, was taken prisoner by the Austrians, who confined him in the citadel of Olmütz and subjected him to the most cruel treatment. He remained in captivity till Bonaparte obtained his liberation in 1797. He returned to France in 1799, but took no part in public affairs during the ascendancy of Napoleon, being opposed both to the Consulate and to the Empire. He sat in the French Second Chamber in 1815 during the Hundred Days and in the Chamber of Deputies from 1818 to 1824, as one of the Extreme Left. From 1825 to 1830 he was a leader of the opposition. In 1830 he took an active part in the revolution of July and figured again as commander of the National Guard. His last speech in the Chamber was made in 1834 shortly before his death, on behalf of the Polish political refugees. His visit to the United States in 1824-25, on invitation of Congress, was a memorable event. Congress voted him a grant of \$200,000 and a township of land. He died in Paris May 20, 1834. Lafayette's son, George Washington Lafayette (1779-1849), and his grandsons and their descendants figured in French Republican politics of the nineteenth century. At the one hundredth anniversary of the battle of Yorktown and the surrender of the British army, celebrated in 1881, a representative of the Lafayette family was present as a national guest. Monuments have been erected to him in various cities of America and France.

Bibliography. *Mémoires, correspondance et manuscrits du général Lafayette* (8 vols., Paris, 1837-40); Bédollière, *Vie politique du marquis de Lafayette* (ib., 1833); B. Sarrans, *La Fayette et la Révolution de 1830* (ib., 1834); Cloquet, *Souvenirs de la vie privée du général Lafayette* (ib., 1836); Tuckerman, *Life of Lafayette* (New York, 1889); Doniel, *Participation de la France à l'établissement des États-Unis* (Paris, 1889); A. Bardoux, *La jeunesse de La Fayette* (ib., 1892); id., *Les dernières années de La Fayette* (ib., 1893); Tower, *The Marquis de La Fayette in the American Revolution* (2 vols., Philadelphia, 1895); E. Charavray, *Le général La Fayette* (Paris, 1895); M. Budinger, *La Fayette in Oesterreich* (Vienna, 1898); Whitman, *Lafayette in Brooklyn* (New York, 1905); M. M. Crawford, *Madame de Lafayette and her Family* (ib., 1907).

LA FAYETTE, MARIE MADELEINE PICHÉ DE LA VERGNE, COUNTESS DE (1634-93). A French novelist. She was the daughter of Aymar de la Vergne, Governor of Havre, and was a friend of La Rochefoucauld (q.v.). Her marriage with the Count de la Fayette was one of "convenience" soon ended by his death. This luckless wedlock afforded the experience necessary for a similar situation in her most famous novel, *La princesse de Clèves*. Her literary salon was the most aristocratic in Paris. Only Madame de Maintenon's instinct served her truly in suspecting the duplicity of Madame de la Fayette's nature, as appears in Perrero's *Lettre inédite de Madame de Lafayette* (1880). The letters seem to prove that the Countess

played an important political rôle at the court of Louis XIV. All the published works of Madame de la Fayette show a supersensitive delicacy in matters of honor. They consist of a short story, *Mlle. de Montpensier* (1660), a novel, *Zayde* (1670), *La princesse de Clèves* (1677 or 1678), two volumes of *Mémoires*, and a second short story, posthumously published, *La comtesse de Tende*. She had been on intimate terms with Henriette d'Angleterre, Duchess of Orléans, and wrote a *Histoire de Madame Henriette d'Angleterre*, which appeared posthumously (1720). Her novels appeared under the name of her friend Segrain, who never claimed them. *La princesse de Clèves* tells of a struggle between duty and passion in an aristocratic wife, who esteemed but did not love her husband. The early part of the novel is dull and clumsy, but the climax has an intensity and power till then unapproached in French fiction. This was the first attempt, and for a long time the best, to transplant psychic conflict from the drama to the novel. It did not, however, as is often asserted, open a new era, for it had no followers. The psychologic novel of later time had a wholly independent origin. Her work was rather a culmination, a blending of the realistic and idealistic efforts of the first three-quarters of the century. Madame de la Fayette's Works are in five volumes (1882). The best edition of *La princesse de Clèves* (Paris, 1881) has a critical study by Lescure. There is an American edition (Boston, 1898) containing some critical material. The *Mémoires* are best edited by Asse (Paris, 1890). Consult: Körting, *Geschichte des französischen Romans im XVII. Jahrhundert* (Oppeln, 1891); Haussonville, *Madame de la Fayette* (Paris, 1891); Lillian Rea, *Life and Times of Marie Madeleine, Countess of Lafayette* (New York, 1909).

LAFAYETTE COLLEGE. An institution of higher learning at Easton, Pa., chartered in 1826. Owing to the failure of the Legislature to make any appropriation, the college was not opened till 1832. The original plan contemplated the training of teachers, and courses were for a time maintained in this department, but were discontinued for lack of students. In 1850, after a period of depression, the college passed under the control of the Presbyterian Synod of Philadelphia. Its work was carried on with many difficulties until the period of the Civil War, since which the college has had a notable growth. Its work is divided into a classical and a scientific department, the latter embracing a general scientific course, a Latin scientific course, and courses in civil, mining, and electrical engineering and chemistry. The scientific department was organized in 1866 with an endowment by Ario Pardee, of Hazelton. There are also courses for graduate students. The degrees conferred are bachelor of arts, philosophy, and science; civil, mining, mechanical, and electrical engineer; master of arts and master of sciences. The college retains courses in biblical instruction as part of the regular curriculum. In 1914 the number of instructors was 50, and the student enrollment 580. The libraries contained 30,000 volumes. The student publication is *The Lafayette*. The college grounds of about 60 acres are situated on the summit of a hill overlooking the city. There are 30 buildings, including modern dormitories, a gymnasium, a memorial library, the Gayley Laboratory of Chemistry and Metallurgy, erected in 1902, and Pardee

Hall, containing the engineering departments, museums, and the rooms of the college literary societies. In 1915 John H. McCracken was chosen president of the college.

LAFENESTRE, là'fe-ně'tr', GEORGES EDOUARD (1837-). A French poet and art critic, born at Orléans. In 1864 he became connected with the administration of the Beaux-Arts, in which he was later appointed inspector. He was commissary to different universal exhibitions, was appointed curator of the department of paintings and drawings in the Louvre (1888), professor in its school, and also in the Collège de France. He was elected a member of the Academy of Fine Arts in 1892. His writings include: *Espérances* (1863) and *Idylles et chansons* (1874), poems; *L'Art vivant* (1881); *Les maîtres anciens* (1882); *La peinture italienne jusqu'au XVIIe siècle* (1886); *Tutien, sa vie et son œuvre* (1886; new ed., 1910), which was crowned by both the French Academy and the Academy of Fine Arts, *Le livre d'or du salon de peinture et sculpture; La peinture en Europe* (5 vols., 1893-97), with Eugene Richtenberger, *Peinture à l'exposition universelle de Paris* (1894); *La traditions dans la peinture française* (1895); *Jean de la Fontaine* (1895, 3d ed., 1910); *Artistes et amateurs* (1902); *Les images fugitives* (1904), verse; *Les peintres de Barbizon* (1907); *Molière* (1909); *Saint François d'Assise et Savonarole, inspirateurs de l'art italien* (1911; 2d ed., 1912).

LA FÈRE, là fâr. A fortified city in France in the Department of the Aisne, on the Oise River, 40 miles northwest of Rheims. It is a fortress of the second class and has a church, built in the fifteenth century, an artillery school, arsenal, college, theatre, museum, and machine shops. Pop.; 1901, 4952, 1911, 5095. La Fère was captured by the Germans in 1814 and was bombarded by them in 1815. In 1870 it was again bombarded and occupied by the German army. For the third time within the century La Fère was taken by the Germans, when they occupied it during the European War which broke out in 1914. See WAR IN EUROPE.

LA FERRIÈRE-PERCY, là fêr'yâr-pêr'sê', HECTOR, COUNT DE (1811-96). A French writer and antiquary, born at Lyons. He began publication with *Le journal de la comtesse de Sanzay* (1855), and two years afterward his *Histoire du canton d'Athis* (Orne) appeared, followed by *Marguerite d'Angoulême* and *Une fabrique de faïence à Lyon sous Henri II* in 1862. He was a member of the General Council of the Department of Orne and also of the Society of Antiquaries in Normandy, and he was sent on special missions to Russia and England to search for historical documents lost to France during the Revolution. At St Petersburg he collected the letters of Catharine de' Medici, which were published in 1880-95, and he gave an account of his own experiences in *Deux années de mission à Saint Pétersbourg* (1867). From papers in the record office of the British Museum he compiled *Le seizième siècle et les Valois* (1878), and his contributions to the *Revue des Deux Mondes*, the *Nouvelle Revue*, and other periodicals were collected under the titles *Trois amoureuses au XVIème siècle* (1885), *La jeunesse de Henri III* (1888), *Henri IV, le roi, l'amoureux* (1890), and *Les deux cours de France et d'Angleterre* (1893).

LAFERTÉ, là'fâr'té', VICTOR. The pen name

of Czar Alexander II's favorite, Ekaterina Mikhailovna Dolgorukova (q.v.).

LAFFAN, lâ'fan, WILLIAM M (ACKAY) (1848-1909). An American newspaper publisher and editor and art connoisseur. He was born in Dublin, Ireland, and was educated there at Trinity College and at St. Cecilia's School of Medicine. Removing to the United States, in 1868 he took up newspaper reporting in San Francisco, where he was later city editor of the *Chronicle* and managing editor of the *Bulletin*. In 1870 he became a reporter on the Baltimore *Daily Bulletin*, of which he subsequently became editor and part owner; later he was full owner of that paper and of the *Sunday Bulletin*. With the *Evening Bulletin*, in which he had merged the *Daily Bulletin*, he fought vigorously the political ring controlling the city government. For a time he left newspaper work to be general passenger agent of the Long Island Railroad. In 1877 he joined the staff of the *New York Sun*, writing essays, art criticism, and general articles. In 1881 he became art agent of Harper and Brothers, whom he represented in London until 1884. He then returned to New York to become publisher of the *Sun*. He established the *Evening Sun* in 1887, bought the interest of the Charles A. Dana estate in the *Sun* in 1900, and in the latter year became president of the Sun Printing and Publishing Company. He founded the Laffan News Bureau. Laffan modeled in clay, painted in oils and water colors, and had considerable skill in etching. He published *American Wood Engravers* (1883) and edited *Oriental Porcelain* (1906) and *Chinese Porcelain in the Metropolitan Museum of Art* (1906).

LAFITTE, lâ'fit', JACQUES (1767-1844). A French financier and statesman. He was born at Bayonne, Oct. 24, 1767, son of a poor carpenter. Going to Paris, he had the good fortune to be employed by the banker Perregaux, whose confidential clerk he became. Soon he was taken into the firm and in 1809 succeeded Perregaux and became a regent of the Bank of France and in 1814 governor of that institution, in which he gained a great reputation as a financier and a very large fortune. He was also president of the Chamber of Commerce, and his great wealth and high personal qualities gave him a European reputation. During the years 1814-15 he signalized himself by his patriotic generosity towards the people of Paris and rendered important financial services to both Napoleon and Louis XVIII, who insisted on including him in the Commission on Public Finances, although his liberal views were distrusted in Royalist circles. After the second Restoration he became one of the opposition in the Chamber of Deputies and enjoyed the highest popularity in Paris, falling out of favor with the court, however, during the last year of Charles X. His house was the meeting place of the opposition, but when the revolution of 1830 broke out he strongly supported the claims of Louis Philippe, financed them with his wealth, and was instrumental in placing him on the throne, being President of the Chamber which decreed the erection of the July monarchy. He became a member of the first ministry of the new King, and in November, 1830, was intrusted with the formation of a cabinet in which he was Minister of Finance as well as Premier. Not finding himself in agreement with the other ministers, however, he resigned his office March 13, 1831, and was replaced by Casimir-Périer.

Meanwhile his banking affairs had fallen into confusion, and he was obliged to sell all his property to pay his debts, amounting to 50,000,000 francs. A national subscription preserved him his house in Paris, and, being again elected to the Chamber as a deputy for Paris, he became a leader of the opposition. From the ruins of his fortune he founded a new discount bank in 1837. As the government receded further from the principles of the revolution of 1830, Lafitte became more active in opposition. In 1843, to the great displeasure of the court, he was elected President of the Chamber of Deputies. He died May 26, 1844. Lafitte was the author of several pamphlets on finance and politics, especially *Réflexions sur la réduction de la rente* (Paris, 1824), but the work entitled *Souvenirs de J. Lafitte, racontés par lui-même* (Paris, 1844) was in reality written by Marchal. Consult P. Thureau-Dangin, *La monarchie de juillet* (Paris, 1884).

LAFITAU, lâ'fê'tô', JOSEPH FRANÇOIS (1670-1746). A Jesuit missionary in America, born at Bordeaux, France. He lived among the Iroquois Indians from 1712 until 1717, when he returned to France and became a professor of literature. He wrote a number of books, the most important of which is *Mœurs des sauvages américains comparées aux mœurs des premiers temps* (1723), a work that was highly praised by Parkman. His other works are a *Mémoire concernant la précieuse plante gin-seng de Tartarie* (1718), in which he describes the American ginseng, which he discovered, and which afterward became a valuable article of export to China; an *Histoire des découvertes et des conquêtes des Portugais dans le nouveau monde* (1733); and an *Histoire de Jean de Brienne, roi de Jérusalem, empereur de Constantinople* (1727). Consult *The Jesuit Relations*, edited by R. G. Thwaites (Cleveland, 1896-1901).

LAFITTE, lâ'fê', CHATEAU. The name of one of the finest of the old wines of France, so called from a château on the Gironde.

LAFITTE, JEAN (1780-c.1826). A noted pirate of the Mexican Gulf. He was born in France and held a commission as a privateer from the French government and subsequently from Cartagena. This service degenerated, however, into piracy, and Barataria Bay in Louisiana became the rendezvous of a horde of adventurers and unscrupulous sailors, among whom Jean Lafitte and his brother Pierre were pre-eminent, becoming the terror of traders in the Gulf of Mexico. On the outbreak of the War of 1812 the British made overtures to Lafitte, who refused to join them. In the meantime an expedition was sent out by the Americans, under Commodore Patterson, designed to break up the stronghold at Barataria Bay, resulting in the flight of the pirates. The anticipated attack on New Orleans by the British troops induced the Governor of Louisiana and General Jackson to accept Lafitte's offer of himself and his men for the defense of the city. The outlaws conducted themselves during the battle with such courage and fidelity that President Madison issued a proclamation early in 1815 recounting their services and according them free pardon for their past misdeeds. In 1816 one of the Lafittes established himself on the island of Galveston, but his unruly colony aroused the hostility of the authorities, who were taking steps for its suppression when the colonists abandoned the place, burning all the houses (1820). Later

Lafitte was heard of in Yucatan, where he is supposed to have died. The Lafittes were audacious smugglers as well as pirates. They brought cargoes of slaves into the country after 1809 and disposed of them by means of a finely organized system of traffic that included many very respectable merchants of New Orleans and its vicinity.

LAFLAMME, la'flam', TOUSSAINT ANTOINE RODOLPHE (1827-93). A Canadian statesman, born in Montreal. He was educated at Sulpice College and in 1849 was called to the bar. He became an aggressive adherent of the Rouge or advanced reform party in Quebec, the opponents of the Bleu or Conservative party in that province. He was editor of a leading newspaper of his party, but kept up the practice of his profession and was appointed a professor of law in McGill University. In 1872 he was elected a member of the Dominion Parliament, and in 1876-78 he was a member of the cabinet during the premiership of Alexander Mackenzie, first as Minister of Inland Revenue and afterward as Minister of Justice.

LAFLECHE, la'flesh', LOUIS FRANÇOIS RICHER (1818-99). A Canadian Roman Catholic bishop and author. He was born at Ste. Anne de la Pêrade, Province of Quebec, and was educated at Nicolet College. Ordained a priest in 1844, he was sent the same year as a missionary to the Indians in the Northwest, where he labored until 1856. He was then appointed professor of mathematics and philosophy in Nicolet College, of which later he became Superior. In 1866 he became coadjutor to the Bishop of Three Rivers and in 1870 succeeded to the bishopric, coming to be regarded as one of the strongest Ultramontane prelates of Quebec. He published *Quelques considérations sur les rapports de la société civile avec la religion et la famille* (1866) and *Conférences sur l'encyclique "Humanum Genus"* (1885).

LA FOLLETTE, la fôl'et. A city in Campbell Co., Tenn., 5 miles northeast of Jacksboro, on the Southern and the Louisville and Nashville railroads. The principal industrial interests are ironworks and coal mines. In the vicinity is Indian River Bluff, the scene of an engagement in the Civil War. La Follette has adopted the commission form of government. Pop., 1900, 366; 1910, 2816.

LA FOLLETTE, la fôl'et, ROBERT MARION (1856-). An American political leader and statesman, born at Primrose, Wis. He graduated in 1879 from the University of Wisconsin, where he had shown great oratorical ability; thereafter he advocated a close relationship between the university activities and the life of the State. Admitted to the bar in 1880, in the same year he was elected district attorney of Dane County on the Republican ticket. He served in this capacity until 1884, when he was elected to Congress from the third district. Although then the youngest member of the House of Representatives, he attracted attention and praise as an able speaker. He was reelected in 1886 and 1888, but defeated in 1890. During his period of service he made important speeches on the Mills Tariff Bill and the Lodge Force Bill—his reply to Speaker Carlisle on the tariff question (1888) became famous. During his last term in Congress he was a member of the Ways and Means Committee and assisted in drafting the McKinley Tariff Bill. He was responsible for the schedule on agricultural products; in-

deed, with reference to the entire bill, it was often said that he had as much to do with the framing of it as had McKinley. Although he resumed the practice of law at Madison, his interest in politics brought him the leadership of the younger group of Wisconsin Republicans in a campaign against the exclusive privileges of corporations and against the control of politics by bosses. In 1897 La Follette wrote a pamphlet on "The Menace of the Machine" and later one on "The Nomination of Candidates by Australian Ballot" which received much attention and comment. They outlined his ideas and demands for electoral reform in Wisconsin. In 1900, after a bitter struggle between his followers, the "Half-Breeds," and the "Stalwarts," or machine politicians, he was nominated and elected Governor. To this office he was reelected in 1902 and 1904. As Governor, La Follette was the aggressive champion of such reform measures as the nomination of candidates by direct primaries (Wisconsin was the first direct primary State), the equalization of taxation, and railroad rate control. Elected United States Senator in 1905, he took his seat as an avowed radical. In 1911 he was reelected. In the Senate he was affiliated with the insurgents who demanded progressive legislation. His denunciation of the control of committee appointments by reactionary Senators and his advocacy of the regulation and physical valuation of railroads made him widely known. His reputation caused him to be prominently mentioned for the presidential nomination in 1908, and in 1912 it enabled him to become an avowed candidate. Alienated from President Taft, in tariff legislation between 1910 and 1912 he joined the Democrats in passing bills revising the wool and steel schedules which were vetoed by the President. La Follette remained Republican in 1912, when many of the more radical members withdrew to form the Progressive party. Although not in favor of Taft, he was strongly opposed to Roosevelt. During the Wilson administration he was frequently consulted about legislation. He edited *The Making of America* (10 vols., 1906), established (1909) *La Follette's Weekly Magazine*, "to aid in bringing government back to the people," and is author of *La Follette's Autobiography: A Personal Narrative of Political Experiences* (Madison, Wis., 1913).

LAFONTAINE, la'fôn'tân', AUGUST HEINRICH JULIUS (1758-1831) (Pen names, Gustav Freier, Miltenberg, Selchow, etc.) A German novelist, born in Brunswick and educated in Helmstedt, where he studied theology. He was a private tutor for several years, acted as chaplain to the Prussian army in 1792, and in 1800 settled in Halle. He became canon of the Magdeburg Cathedral as a reward for the dedication of one of his books to Friedrich Wilhelm III and Luise. The popularity of his novels, which are sentimental and sometimes didactic, now and then also piquant, tales of domestic life, was remarkable, especially in view of his great fertility. He wrote more than 160 volumes and soon ruined what style he had originally possessed. He was sharply attacked by the Romantic school, especially by A. W. Schlegel. Among his more popular works are: *Der Sonderling* (1793); *Der Naturmensch* (1791); *Saint Julien* (1798); *Fedor und Marie* (1805). Consult Gruber, *A. Lafontaine's Leben und Wirken* (Halle, 1833).

LA FONTAINE, HENRI (1854-). A Belgian jurist. He was born in Brussels, the son of a banker, and studied law in the University of Brussels. In 1878 he became secretary of an association for the promotion of technical schools for girls and in 1889 secretary of the Belgian Peace Society. In 1892 he was head of the International Peace Bureau. He became professor of international law in the University of Brussels in 1893 and a Senator of Belgium in 1895. In 1907 he was secretary of the Union of International Association and president of the Interparliamentary Peace Congress at Bern. His work for international peace was rewarded in 1913 by the Nobel prize. La Fontaine wrote: *Les droits et les obligations des entrepreneurs des travaux publics* (1885); *Traité de la contrefaçon* (1888); *Pasicrisie internationale* (1902); *Bibliographie de la paix et de l'arbitrage* (1904).

LA FONTAINE, JEAN DE (1621-95). A French poet, noted for his tales (*Contes*) and fables. He was born at Château-Thierry in Champagne, July 8, 1621, of good though not noble family, for his father was a superintendent of streams and forests. Jean began to study for the priesthood, but, with the dreamy irresponsibility that characterized his life, he forsook this career after 18 months, and, though the father resigned in Jean's favor (1643) and even provided him with a wife, the 15-year-old Marie Héricart (1647), his life was still that of a happy-go-lucky idler. La Fontaine's poetic talent was awakened by the reading of Malherbe and Racan. For his amusement he adapted unsuccessfully the *Eunuchus* of Terence (1654), and by . . . a narrative poem, *Adonis*, to Fouquet . . . he won the patronage of the then powerful Minister, who received him into his household. On Fouquet's fall he had as successive patronesses the Duchess of Bouillon (1662), the Duchess of Orléans (1667), Madame de la Sablière (1671), and Madame d'Hervart (1693). To please the first of these, he began to write *Contes et nouvelles en vers* (1665). To these he added at intervals until his election to the Academy (1683), which the King had sanctioned only on his promise to be "proper" (*sage*); for the *Contes*, as a rule, were not. The *Fables*, whose humor was quite without such Gallic spice, La Fontaine had begun to write in 1668 and in 1671 had given further illustration of his versatile talent as editor of a volume of mystically religious verse. He wrote also, in this his most productive period, *Les amours de Cupid et Psyché* (1669), an epic *La captivité de Saint Malo* (1673), and the *Poème du Quinquina* (1682), with several slight if not weak comedies collected in 1702. In his last year (1695) he seems to have become sincerely religious. La Fontaine was a spoiled child of nature, simply guileless and carelessly absent-minded, exasperating the friends who tolerated and could not but love him. Racine, Boileau, and Molière were his closest intimates, but Molière alone realized the permanent value of his work in the development of French literature through the *Contes* and especially through the *Fables*. The former are essentially fabliaux (q.v.), most skillfully told and with a delicate feeling for style and prosody that conceals the highest art under its apparent spontaneity. Here La Fontaine is the follower of La Salle, Des Périers, and the *Heptameron*, the imitator of Boccaccio and the Italian story-tellers, none of whom recognized what are now regarded as

fundamental conventions of decency. The poet was assailed by contemporary adversaries on the score of impropriety. The *Fables*, on the other hand, could shock no reader's modesty, though they reveal a total incapacity for moral indignation and a boundless tolerance of the "natural." The graceful liveliness of their narration, the restrained naturalism of their description, the homely wisdom of their unobtruded moral, the boldness of their covert political teaching, especially in later years, the shrewd analysis and observation of human motive, has been a perennial delight to generations. The fact that every French schoolboy knew the *Fables* influenced and aided the emancipation of poetry by the Romantic school of 1830. In mind La Fontaine is akin to Molière. None of his imitators has approached him, and with Molière he is the most widely liked French writer of the seventeenth century. La Fontaine's works are in many editions. The most elaborate is by Regnier (9 vols., Paris, 1888-92). Useful also are those of Moland (7 vols., ib., 1872-76) and Marty-Laveaux (5 vols., ib., 1857-77). Regnier's edition has a good biography by Mesnard. Consult: Lafenestre, *La Fontaine* (ib., 1885); Emile Faguet, *Jean de La Fontaine* (ib., 1900); Taine, *La Fontaine et ses fables* (15th ed., ib., 1901); and for further bibliography, consult Brunetière, *Manuel de l'histoire de la littérature française* (ib., 1897), translated by Derechef (London, 1898).

LAFONTAINE, lă'fôn-tân', Fr. pron. là'fôn-tân', SIR LOUIS HIPPOLYTE (1807-64). A Canadian jurist and statesman. He was born at Boucherville, Lower Canada (Quebec), and was educated at the College of Montreal. He studied law, was called to the bar, and began the practice of his profession in Montreal. In 1830 he was an unsuccessful candidate for the Provincial Assembly, but later was elected. At first he was a supporter of L. J. Papineau (q.v.). The rebellion of 1837, which disturbed both Lower and Upper Canada, brought Lafontaine into political notice. For several years there had been a conflict between the executive and the Legislative Assembly of Lower Canada, and the knowledge that a rebellion was contemplated in Upper Canada induced a French-Canadian party, headed by Louis J. Papineau, to strike for independence and the establishment of a French nation on the banks of the St. Lawrence. Lafontaine in 1838 was arrested for high treason, but his guilt was not established, and it was afterward known that he was not prepared to support Papineau's extreme measures. He subsequently went to England, but, having been led to expect arrest, fled to France and did not return to Lower Canada until after the failure of the rebellion. His subsequent position in Canadian history was creditable and important. The act of union in 1841 helped to accomplish a change by which the ministry was held accountable to the popular branch of the Legislature and remained in office only so long as it could command a majority. Lafontaine, though at first opposed to the union of the two provinces, was a firm supporter of responsible government and became the political ally of Robert Baldwin in establishing it firmly in Canada. The Baldwin-Lafontaine ministry lasted two years (1842-44), when it was compelled to resign, but four years afterward Lafontaine came into power again as Premier, and the Lafontaine-Baldwin ministry, often called in Canada "the great ministry," by reason of its

important reforming measures, held office during 1848-51. It procured the final acceptance of the principle and practice of responsible government. Lafontaine, after retiring from the premiership, was in 1853 appointed Chief Justice of Lower Canada, retaining office until his death. In 1854 he was made Baronet. As a jurist, he was one of the ablest that Canada has produced. Consult Stephen Leacock, *Baldwin, Lafontaine, Hincks*, in the "Makers of Canada" Series (Toronto, 1906).

LAFONTAINE, LOUIS MARIE HENRI THOMAS (1826-98). A French actor and playwright, born at Bordeaux. He studied for the priesthood, but ran away to sea, afterward engaged in the silk trade, and then went on the stage under the name of Charles Rooch. From the provinces he went to Paris, where he played at the Gymnase and afterward at the Théâtre Français. He met with further successes at the Vaudeville (1857), the Odéon, the Gaité, and the Porte Saint-Martin, in such plays as *Dahla* (1857), *Les ganaches* (1862), *La jeunesse de Louis XIV* (1874), *Frou-Frou* (1883), *Un fils de famille* (1886), and *L'Abbé Constantin* (1888). He acted in his own plays, *Pierre Gendron* (1876) and *La servante* (1886), besides *Jack* (1881), a collaboration with Daudet; and his essays, *Les petites misères* (1881), were crowned by the French Academy. He published also *L'Homme qui tue* (1882), souvenirs of the theatre under the title *Thérèse, ma mie* (1883), and *Nos bons camarades* (1885).

LA FORCE, la förs. A former prison of Paris, so called from the dukes of La Force, in whose residence, on the Rue du Roi-de-Sicile, it was established in 1780, to take the place of the prisons of For-l'Evêque and the Châtelet. It was the chief scene of the September massacres of 1792. The prison is described in Hugo's *Les misérables*. It was suppressed in 1850, and the prisoners were transferred to Mazas, a house of detention, which also disappeared in 1898.

LA FORGE, la förzh, ANATOLE DE (1820-92). A French politician and journalist, born in Paris. In 1846-48 he was in Spain on a government mission, which gained him the cross of the Legion of Honor. Subsequently he became one of the editors of the *Siccle*, which defended liberal ideas and the principle of nationalism. During the Franco-Prussian War he was Prefect of Aisne and rendered notable service in the defense of Saint-Quentin (October, 1870), where he was severely wounded. He was appointed to the Prefecture of the Basses-Pyrénées in 1871, was director of the press under the Minister of the Interior in 1877-79, and in 1881 was elected from Paris to the Chamber of Deputies, of which he became Vice President in 1885. He was president of the Confederated Patriots (1883-85) and inclined to radicalism in politics but was highly esteemed by all parties. His published works include: *L'Instruction publique en Espagne* (1847); *Des vicissitudes politiques de l'Italie dans ses rapports avec la France* (1850); *Histoire de la république de Venise sous Mann* (1853); *La Pologne en 1864* (1864); *La révolution française et l'église* (1882); *Les serviteurs de la démocratie* (1883).

LAFORGE, FRANK (1879-). An American pianist, born in Rockford, Ill. He received his first musical instruction from his sister and H. M. Wild. From 1900 to 1904 he studied piano with Leschetizky in Vienna and composi-

tion with Labor and Navratil. Then he went with Madame Sembrich as her accompanist on concert tours through Germany, Russia, France, and the United States. His masterly accompanying won him such fame that he came to be in constant demand by the greatest singers. He proved the utter absurdity of the old adage "A good pianist is never a good accompanist." On the contrary, such work as his demonstrates that only an excellent pianist can do justice to the difficult piano parts written by modern composers. He invariably accompanies without music. As a composer, he became known through songs and piano pieces.

LA FOSSE, la fös, or LAFOSSE, CHARLES DE (1636-1716). A French painter, born in Paris, son of the famous court jeweler. He was one of Lebrun's best pupils and received a scholarship, which enabled him to spend some years in Italy. His frescoes executed in Rome brought him quick fame, and he was called to Lyons to paint in a chapel 10 huge pictures, of which two have survived. For Louis XIV he executed important work at the Tuileries, at Marly, and at the Trianon. In the Académie des Beaux-Arts, just founded, he became professor and later rector. In London he decorated the residence of Lord Montague and was invited by William III to remain permanently in England. But his protector, the architect Mansart, advised him to return and gave him all the decorations of the Invalides. Owing to the death of Mansart, the work was divided with Coppel, Boulogne, and Jouvenet, and he painted only the dome and four panels. La Fosse's best work is at Versailles—on the ceiling of the throne hall, Augustus, Vespasian, Coriolanus; in the hall of Diana, Jason, Alexander; in the chapel an immense "Resurrection"; and many paintings in the galleries. His style was the style of Lebrun, with perhaps even more leaning towards the bold reliefs and deep shadows of Rubens.

LA FOURCHE, la föörsh. A bayou in southeast Louisiana and one of the outlets of the Mississippi (Map: Louisiana, J 8). It leaves the right bank of that river at Donaldsville and flows southeast, emptying into the Gulf of Mexico through Fourchon and Timbalier passes, about 50 miles west of the Mississippi Delta. Its length is 150 miles, and it is navigable for 100 miles from its mouth, being the channel of an extensive commerce with the interior.

LAFUENTE Y ALCÁNTARA, la-fwän'tä ä ä'l-kän'tä-rä, MIGUEL (1817-50). A Spanish historian, born at Archidona (Málaga). He was deputy to the Cortes from Archidona (1846) and then fiscal of the island of Cuba, where he died a few days after his arrival. This post, like his election to the Royal Academy of History (Madrid, 1847), was in recognition of his services as historian and politician. His important *Historia de Granada* (4 vols., 1843-46) was again printed in Paris (1852), with a biography by José Zorrilla. He also prepared an edition of the hitherto unedited chronicle of Andrés Bernaldez, *Historia de los reyes católicos Fernando é Isabel* (Granada, 1856).—His brother EMILIO (1825-68), born at Archidona, was a well-known Arabic scholar, and at the time of his death held the position of director of the library of San Isidro. He wrote, among other volumes, *Inscripciones árabes de Granada, precedidas de una reseña histórica y de la genealogía de los reyes Alahmares* (1859); and his *Cancionero popular: colección escogida de seguidillas y cop-*

las (2 vols., 1865) was the first work of its kind in Spain.

LAFUENTE Y ZAMALLOA, thä'mäl-yō'ä, MODESTO (1806-66). A Spanish historian and critic, born at Ravanal de los Caballeros, May 1, 1806. Trained in philosophy and theology, he obtained a chair in philosophy at the University of Astorga in 1832, and two years later in a second competition obtained at the same university a chair in theology. Later he went to Madrid to engage in journalism. Under the pseudonyms of Fray Gerundio (the hero of a famous work by Isla) and Pelegrín Tirabeque, he interpreted in a popular and easy style most important political questions. His critical and satirical powers were manifested in the series of essays termed *Capitulas* (1837-40) and a second series called *Teatro social del siglo XIX* (1846). His most important production was the *Historia general de España* (1st ed., 30 vols., 1850-67, as a 2d ed., 13 of these volumes, scattered through the set, were reprinted in 1869; 3d ed., 13 vols., 1874-75; 4th ed., with continuation by Juan Valera, assisted by Andrés Borego and Antonio Pirala, 25 vols., 1887-90). Lafuente died Oct. 25, 1866. Of his other works there may be mentioned the *Viaje aerostático de Fray Gerundio y Tirabeque* (1847) and the *Revista europea* (1848-49). Lafuente's verse was of mediocre quality.

LAG, LAIRD OF. A name applied to Sir Robert Grierson (q.v.).

LAG. A phenomenon attending the magnetization of iron. See MAGNETISM, *Magnetic Properties of Iron*; HYSTERESIS.

LA GALLISSONNIÈRE, là gä'l'sō'nyär', MARQUIS and COMTE DE. See GALLISSONNIÈRE

LAGAN, lä'gan. A small river in the Province of Ulster, Ireland. It rises in the middle of County Down about 13 miles west of Downpatrick and, flowing first northwest and finally northeast, empties into Belfast Lough at Belfast, after a course of about 35 miles. Its lower half forms the boundary between counties Down and Antrim. The Lagan Canal, which is 27 miles long and admits vessels of 5½ feet draft, starts from the river about 1 mile from Belfast and enters Lough Neagh about 2 miles from Lurgan.

LAGARDE, la'gärd' (properly Bötticher, in honor of his mother's name), PAUL ANTON (1827-1891). One of the greatest Orientalists of the nineteenth century. He was born at Berlin, Nov. 2, 1827. He studied theology, philosophy, and Eastern languages at Berlin and Halle and began his academic career in the latter place in 1851. From 1854 to 1866 he was teacher at a Gymnasium in Berlin. In 1869 he became Ewald's successor at Göttingen and remained there till his death (Dec. 22, 1891). Lagarde's writings were very numerous and represent a wide field of activity. His earlier studies were on Iranian subjects and were published as *Gesammelte Abhandlungen* (1866). As the result of investigations in London and Paris in 1852-53, he published several Syriac and Greek texts and critical studies, among them: *Didascalia Apostolorum* (1854); *Analecta Syriaca* (1858); the books of Titus Bostrenus against the Manichæans, Greek and Syriac (1859); *Geoponica* (1860); *Reliquiæ Juris Ecclesiastici Antiquissimæ Græcæ* (1856); *Constitutiones Apostolorum* (1862); *Clementina* (1865). Other studies of a like character are the *Prætermissorum Libri Duo* (1879); *Petri Hispani de Lingua Arabica*

Libri Duo (1883); *Judæ Harizii Macamæ Hebraice* (1883). He edited the *Opere italiane* of Giordano Bruno (1888-89). In his *Armenische Studien* (1877) and *Persische Studien* (1884) he continued his Iranian studies. *Semitica* (1878-79), *Orientalia* (1879-80), *Ægyptiaca* (1883), and the *Uebersicht über die im aramaischen, arabischen und hebraischen ubliche Bildung der Nomina* (1889) were important works. Lagarde's most valuable work, perhaps, was his contributions to the textual criticism of the Bible and upon the Old Testament Apocrypha and the Septuagint. *Symmiata* (1877-80) and the *Mitteilungen* (1884-91) contain some of the best of his later work. Consult the "Bibliography of the Works of Paul Anton de Lagarde," by Gottheil, in the *Proceedings of the American Oriental Society* for 1892. A volume of poems written by him appeared after his death (1897). His library is now owned by the New York University. Consult the memoirs by Anna de Lagarde (Göttingen, 1894) and by Albrecht (Berlin, 1901).

LAGAR/TO. One or another of the lizard fishes (q.v.), especially *Synodus fætens*.

LAGASH (lä'gäsh or lä'gäsh) **DYNASTY**. See BABYLONIA, *History*.

LAGENARIA, lä'jé-nä'ri-ä See BOTTLE GOURD.

LAGERLÖF, lä'gér-léf, (OTILIA LOVISA) SELMA (1858-). A distinguished Swedish story-writer. She was born at the old family manor of Mårbacka, Vermland; her father was a Swedish army officer; her mother came of a family of artists and clergymen. While working upon her first book, *Gosta Berlings Saga* (2 vols., 1891; Eng. trans., Boston, 1898), she was a teacher in a high school for girls in Landskrona. Coming at a time when Sweden was weary of the pessimistic realism which had been the vogue, *Gosta Berling* was a refreshing breath of romance and brought the author prompt and large success. A year's travel in Egypt, Palestine, and Greece provided her with material for the second volume of her *Jerusalem* (2 vols., 1901-02; Eng. trans., New York, 1903), and also for portions of her *Christ Legends* (1904; Eng. trans., New York, 1908). Out of travel and a study of conditions in Italy and especially in Sicily came the *Miracles of Anti-Christ* (1897; Eng. trans., Boston, 1899). Commissioned (1902) by the National Teachers' Association of Sweden to write a school textbook which should present in story form the folklore, geographical peculiarities, and flora and fauna of the various provinces of the country, Miss Lagerlöf accomplished her task with a success that added a children's classic to Swedish literature—*Nils Holgersson's Wonderful Journey through Sweden* (2 vols., 1906-07), the English translation of which is entitled *The Wonderful Adventures of Nils* (New York, 1907). Honors followed Miss Lagerlöf's successes: in 1904 the Swedish Academy awarded her its great gold medal; in 1907 she received the degree of doctor of letters from Upsala University; in 1909 she was awarded the Nobel prize for literature; and in 1914 the Academy (Swedish) elected her to membership—the first woman to have received this honor. Her vogue in America is in part due to Mrs. Velma Swanton Howard, who early believed in her appeal to Americans and carefully translated many of her books. Miss Lagerlöf's work includes also: *From a Swedish Homestead* (1899; Eng. trans.,

New York, 1901); *Invisible Links* (1894; Eng. trans., Boston, 1899); *The Girl from the Marsh Croft* (1908; Eng. trans., Boston, 1910); *Further Adventures of Nils* (1911); *Liljebrona's Home* (1911; Eng. trans., New York, 1914); *The Legend of the Sacred Image* (1913; Eng. trans., New York, 1914); *Matilda Wrede* (1913; Eng. trans., New York, 1914). In 1914 a folk comedy, *Dunungen*, based on her book *Invisible Links*, was produced in Stockholm. Consult J. Mortensen, *Selma Lagerlof* (2d ed., Stockholm, 1913).

LAGERSTRÆMIA, lā'gēr-strē'mi-ā or lā'gēr (Neo-Lat., named in honor of Magnus von Lagerström, a director of the East Indian Company at Götterburg). A genus of plants of the family Lythraceæ, distinguished by winged seeds and with about 20 species including some of the noblest trees of tropical forests. *Lagerstræmia flos-reginæ* is the jarool of India, a magnificent tree, which attains a height of 50 feet, with red wood, which, although soft, is durable under water and is therefore much used for boat building. It has been successfully introduced into southern California as an ornamental plant. *Lagerstræmia indica*, the crape myrtle, with showy pink, red, or white flowers, is a common shrub cultivated from the vicinity of Washington, D. C., southward. If grown much farther north, it requires winter protection. It is a native of India or China. Cf. MYRTLE.

LAGOA DOS PATOS, lā-gō'ā dush pā'tush. The largest lake of Brazil, 145 miles long by 20 to 40 wide, situated in the State of Rio Grande do Sul and separated from the Atlantic Ocean by a small strip of swampy land (Map: Argentina, J 4). It receives from the west the Jacuhy River and is connected by a short channel with the Lagoa Mirim on the south. Lagoa dos Patos communicates by an inlet with the Atlantic at the city of Rio Grande do Sul. At its north extremity is Porto Alegre. It is very shallow, but has a navigable channel.

LAGOA MIRI, lā-gō'ā mē'rē. See MIRIM.

LAGO D'AVERNO, lā-gō dā-vēr'nō. See AVERNUS.

LAGO DEI PALICI, dā'ē pā-lē'chē. See NAFFIA.

LAGO DI PERUGIA, dē pā-rōō'jā. See TRASIMENO, LAGO.

LAGO MAGGIORE. See MAGGIORE, LAKE.

LAGOON' ISLANDS. See ELLICE ISLANDS.

LA GORCE, lā gōrs', PIERRE (FRANÇOIS GUSTAVE) DE (1846-). A French historian, born in Vannes. He studied law and held an official position in Arras until 1880, when he devoted himself to historical study. He received the Gobert prize of the Academy of Moral and Political Sciences, and in 1914 was elected to the French Academy. His important works are: *Histoire de la seconde république française* (2 vols., 1887), covering the years 1848-51; *Histoire du second empire* (7 vols., 1894-1905), carrying the story from December, 1851, to September, 1870; *Histoire religieuse de la révolution française* (1909).

LAGOS, lā'gōs or lā'gōs. Formerly a British colony and protectorate of West Africa; later a province, called also the Western Province, of Southern Nigeria (Map: Africa, E 4). By an order in council which came into operation Jan. 1, 1914, Northern Nigeria and Southern Nigeria were amalgamated into the Colony and Protectorate of Nigeria, and the division of Southern

Nigeria into three provinces (Lagos, Central Province, and Eastern Province) was abolished. Lagos Province extended from the French Colony of Dahomey eastward to the Central Province, and from the Bight of Benin northward to Northern Nigeria (the boundary being about lat. 90° N.; including all the Yoruba country with the exception of Ilorin). Its area was approximately 29,000 square miles and included the coastal region of Southern Nigeria, known as the "colony" (about 1300 square miles). The total population in 1914 was estimated at 2,250,000. The interior of Lagos is hilly. The rivers are unimportant. The climate, like that of the Guinea country in general, is unhealthy for Europeans, though medical and sanitary science has done much towards lessening the prevalence of fever. At the town of Lagos the mean temperature in 1912 was 81.2°, the highest shade temperature being 98°, in November, and the lowest 69°, in June. The rainfall in the province was 40.50 inches in 1912 and varied from 27.86 to 178.41 inches in different parts of the country. Numerous tropical crops are cultivated to some extent. Cotton culture has been introduced. Manufactures include little besides native cloths and mats, brick, pottery, boats and canoes, carved ivory, beadwork, and certain ironwares. The chief exports include palm oil, palm kernels, rubber, and mahogany. There is cable communication with England and with Bonny in the (former) Eastern Province. In 1901 a government railway was opened, extending from Iddo Island (which lies between Lagos Island and the mainland) to Ibadan, 123½ miles distant; Iddo Island is connected with the mainland by a railway and road bridge, 900 feet long. This line was subsequently extended 182¾ miles to Jebba in Northern Nigeria and finally to a point 145 miles northeast of Jebba, forming a junction with the Baro-Kano line. Telegraph lines connect with the Dahomey system. In various districts there are many good roads. There are several government and assisted schools and also Mohammedan schools.

The natives may be comprehended in three groups: the Jejis, or Effons, the Benins, or Binis, including the Mahins and Jekris; and the most important, the Yorubas, including the Oyos (the Yorubas proper), the Egbas, the Ifes, the Ijebus, the Ijeshas, the Aworis, the Ekos or Igaras, the Ekitis, and the Egbados.

The chief towns include Lagos (see below), Ibadan (pop., about 175,000), Abeokuta (51,000), Oyo (45,000), Ijebu Ode (22,000), Ondo (24,000), Ilesha (16,000), Ikorodu (12,000), and Epe (8000).

From 1851 to 1861 the British made unsuccessful efforts to induce the kings of Lagos to put down the slave trade. In the latter year King Docemo ceded his possessions to Great Britain in consideration of an annual pension of £1000 (which he received until his death in 1885). Lagos was formed into a separate government in 1863; in 1866 it was attached to the government of the West African Settlements; in 1874 it was incorporated with the Gold Coast Colony; in 1886 it was erected into a separate colony; in 1906 it was amalgamated with Southern Nigeria as the Lagos, or Western, Province. To the original cession other cessions of territory by native chiefs were added at various times from 1862 to 1899.

LAGOS. The temporary capital of Nigeria, from Jan. 1, 1914 (pending the selection of a

site for a capital on the river Kaduna). It is situated on an island of the same name (Map: Africa, E 4), and is the most important seaport of Upper Guinea and one of the largest and most progressive towns of West Africa. It is 4279 miles from Liverpool, 1203 miles from Freetown (Sierra Leone), 132 miles from Forcados, and 395 miles from Calabar. The town is connected with Iddo Island by a bridge 2500 feet long, carried on steel screw piles, some of which are 100 feet long. The population, which is very mixed, is about 60,000; Europeans number about 500. Extensive harbor works were in progress in 1914; towards the end of the preceding year 7000 feet of the Eastern Training Mole and 1800 feet of the Western Mole had been completed. Formerly the town of Lagos was a centre of the slave trade.

LAGOS, lá'gós. A city of Mexico, in the northeastern part of the State of Jalisco, on the Mexico Central Railroad, 6000 feet above sea level (Map: Mexico, H 7). It was founded in 1563, by Francisco Martel, and after the War of Independence was named Lagos de Moreno after its defender, Pedro Moreno, who died here in battle against the Spaniards in 1817. Pop., 1900, 15,999; 1910, 12,243.

LAGOS, lá'gush. A seaport of Portugal, in the Province of Algarve, on a wide bay on the south coast, 40 miles west of Faro (Map: Portugal, A 4). It is fortified by an ancient wall with two batteries. A large viaduct leads over the narrow part of the bay. The harbor affords protection from north and west winds only, but is deep and capacious. The surrounding region is fertile, and the vine is much cultivated. A productive tunny fishery is carried on in the vicinity. Lagos is supposed to be on the site of the Roman *Lacobriga*. Pop., 1900, 8268. In the bay of Lagos, Admiral Boscawen obtained a signal victory over the French Mediterranean fleet, Aug. 18, 1759, and in 1797 Admiral Jervis defeated a Spanish squadron.

LAGOSTA, lá-gó'stá. An island in the Adriatic, off the coast of Dalmatia, Austria, to which it belongs (Map: Austria, E 5). It is 65 miles west of Ragusa, and has an area of 16 square miles. Its coasts are precipitous. On the north side is the small village of Lagosta, whose inhabitants are engaged chiefly in fishing and the production of oil and wine.

LAGOTHRIX (Neo-Lat., from Gk. *λαγός*, *lagós*, hare + *θηρίον*, *thirion*, hair). A genus of South American monkeys, closely allied to *Cebus*, and containing six species of woolly howlers, or "barrigudos." Among these are *Lagothrix lagotricha*, or *humboldtii*, and *Lagothrix infumata*. The former is the larger and better known. It inhabits the upper Amazon valley, but the latter is abundant about the headwaters of that river, and upon the slopes of the Andes, where it forms an important article of the food of both whites and Indians. One small tribe of 200 Indians killed and ate about 1200 woolly monkeys every year. These animals live almost exclusively upon fruits. In captivity they are quiet and grave, and have mild tempers, but they are very delicate and short-lived.

LAGO TRASIMENO. See TRASIMENO, LAGO.

LA GRANDE, lá gránd'. A city and county seat of Union Co., Oreg., about 305 miles by rail east by south of Portland, on the Grande Ronde River, and on the line of the Oregon Washington Railroad and Navigation Company

(Map: Oregon, G 2). It is the most important commercial centre of a productive lumber, wheat, fruit, and live-stock region, and has lumber mills, railroad shops, a flour mill, brickyard, etc. The city has adopted the commission form of government. Pop., 1900, 2991; 1910, 4843.

LA GRANGE, lá gránj. A city and the county seat of Troup Co., Ga., 71 miles southwest of Atlanta, on the Atlanta and West Point, the Atlanta, Birmingham, and Atlantic, and the Macon and Birmingham railroads (Map: Georgia, A 2). It has large cotton and cottonseed-oil mills and a creamery, and is of considerable importance as a commercial centre, having several jobbing houses. There are two female colleges, which are controlled by the Methodist and Baptist denominations. Settled in 1826, La Grange was incorporated in 1828. The city owns the water works, electric-light and sewage plants. Pop., 1900, 4274; 1910, 5587.

LA GRANGE. A village in Cook Co., Ill., 14 miles west of Chicago, on the Chicago, Burlington, and Quincy and the Indiana Harbor Belt railroads (Map: Illinois, J 2). Chiefly residential, the town contains a State Masonic orphans home, Nazareth Academy, St. Joseph's Institute, and Broadview Seminary. There is also an aluminium factory. Pop., 1900, 3969; 1910, 5282.

LA GRANGE. A town and the county seat of La Grange Co., Ind., 47 miles north by west of Fort Wayne, on the Grand Rapids and Indiana and the St. Joseph Valley Traction railroads (Map: Indiana, G 1). It has agricultural, stock-raising, and creamery interests, and manufactures of flour, lumber, pickles, ice, ice cream, and cement-brick machinery. The water works are owned by the town. Pop., 1900, 1703; 1910, 1772.

LA GRANGE. A city in Lewis Co., Mo., 10 miles north by west of Quincy, Ill., on the Mississippi River, on several steamship lines, and on the Chicago, Burlington, and Quincy railroad (Map: Missouri, E 1). It has an important river trade, exporting hay, corn, oats, and creamery products, and has a large foundry, a creamery, and a pearl-button factory. La Grange College (Baptist) was established here in 1858. It has artesian wells of medicinal water, and enjoys some popularity as a health and summer resort. La Grange was settled in 1833 and incorporated in 1853. The water works and electric-light plant are owned by the city. Pop., 1910, 1360.

LA GRANGE. A city and the county seat of Fayette Co., Tex., 96 miles by rail west by north of Houston, on the Colorado River, here crossed by two fine bridges, and on the Missouri, Kansas, and Texas and the Galveston, Harrisburg and San Antonio railroads (Map: Texas, D 5). It has a considerable trade in cotton, cottonseed oil, grain, live stock, etc., and several industrial establishments, among which are cotton gins and compresses and cottonseed-oil mills. The water works are owned by the city. Pop., 1900, 2392; 1910, 1850.

LAGRANGE, lá'gránzh', JOSEPH LOUIS (1736-1813). One of the greatest mathematicians of the eighteenth century. He was born at Turin, his father being War Treasurer to the King of Sardinia. Lagrange was educated at the College of Turin. At first he became interested in speculative philosophy, but his extraordinary mathematical ability soon made it clear that the proper domain of his activity

was mathematics. At 19 he communicated to Euler his solution of the famous isoperimetric problem, which had led him to establish the principles of the calculus of variations. The result was that Lagrange at once took a place among the foremost savants of Europe. He was soon made professor of mathematics in the artillery school at Turin, and in 1758 he founded the society which subsequently became the Royal Academy of Turin. In 1764 he received the prize offered by the Academy of Sciences at Paris for an investigation on the libration of the moon; in 1766 he was likewise successful in a question concerning the theory of the satellites of Jupiter, and in the same year was called to take Euler's place as director of the Academy of Berlin, which position he held for 20 years. He then went to Paris, and became a member of the Academy. During the Revolution he was at the head of the commission which had in charge the establishment of the metric or decimal system, and was also a member of the bureau for rewarding useful inventions. On the establishment of the Ecole Polytechnique (1797) Lagrange was made professor there. After the Revolution he was made professor in the newly established Ecole Normale. Under Napoleon he was made a member of the Senate and given the rank of Count. In pure mathematics Lagrange is noted for his contributions to the theory of series, the theory of numbers, differential equations, the numerical solution of equations, and the calculus of variations. His astronomical work was, however, quite as remarkable. His most noted work is *Mécanique analytique* (1788; 3d ed., 1853-55, Ger. trans. by Servus, 1887). His other works are: *Théorie des fonctions analytiques, contenant les principes du calcul différentiel* (1797; 3d ed., 1847, Ger. trans. by Grison, 1798-99); *Traité de la résolution des équations numériques* (1798; 3d ed., 1826); *Leçons sur le calcul des fonctions* (1806); *Lectures on Elementary Mathematics* (trans. by McCormack, Chicago, 1898); besides a large number of memoirs. His complete works, in 14 volumes, were published at Paris in 1866-92. His manuscripts were purchased in 1815 and given to the Institute by Carnot. Lagrange's name is connected with numerous mathematical theorems. For his biography, consult J. B. J. Delambre, "Notice sur la vie et les œuvres de Lagrange," in J. L. Lagrange, *Œuvres*, vol. i (Paris, 1866).

LA GRANJA, là grăn'ha. A town of Spain. See SAN ILDEFONSO.

LA GRIPPE. See INFLUENZA.

LA GRITA, là gr'tá. A town in the State of Táchira, Venezuela. It is situated in a beautiful mountain valley nearly 6000 feet above the sea, 75 miles south of Lake Maracaibo, and 60 miles southwest of Mérida, the capital of Los Andes. In the surrounding region wheat, sugar cane, tobacco, coffee, cacao, and rice are produced, and stock raising is carried on. It has a delightful climate, lies on the high road between Mérida and Maracaibo, and is an important trading centre. It was founded in 1576 by Francisco de Cáceres and has been several times visited by destructive earthquakes. Pop. (commune, est.), 26,000.

LA GUAYRA, là gwí'rá. A leading seaport of Venezuela, situated on a narrow strip of land between the mountains and the sea and about 5 miles from Carácas, of which it is the port (Map: Colombia, D 1). Its climate is

very hot and unhealthful, the temperature averaging 84° F., but of late sanitary improvements have lessened the discomforts. The principal square contains a statue of the celebrated physician Vargas, a native of La Guayra, and there are several churches and hospitals. The harbor is protected by a fort and a breakwater. La Guayra imports chiefly manufactured goods and exports coffee, cacao, and skins. In 1912 it held first rank in imports, valued at \$8,544,187, and fourth rank in exports, which amounted to \$4,536,256. It has factories for cigars, cigarettes, hats, and boots, which are made mainly for home consumption. Steamship lines connect it with Europe and America, and it is the terminus of a cable to Curaçao. A railroad 29 miles long, constructed over the high intervening mountains, connects the town with Carácas. It has a floating dry dock and shipbuilding plant. It is the seat of a United States consul. Pop., 12,000. La Guayra was founded in 1588. Its port was blockaded in 1903 by the English-German fleet pending the settlement of claims against the Venezuelan government.

LA GUÉRONNIÈRE, là gá'rónyâr', LOUIS ETIENNE ARTHUR, VICOMTE DE (1816-75). A French politician, born at Limoges in Haute-Vienne. He first attracted notice by the articles which he contributed to the *Avenir National* of Limoges about 1835. Subsequently he made the acquaintance of Lamartine, whom for many years he regarded as both his political and literary master. Ultimately he came to a rupture with Lamartine and became an ardent Bonapartist and the apologist of the coup d'état. He was a member of the Corps Législatif in 1852, State Councilor in 1853, and Senator in 1861. In 1868 he was made Ambassador at Brussels and in 1870 was sent to Constantinople. After the downfall of the Second Empire he edited the paper *La Presse* and founded afterward *Le Salut*. He died in Paris, Dec. 23, 1875. He wrote: *Études et portraits politiques contemporains* (1856); *L'Empereur Napoléon III et l'Angleterre* (1858); *L'Empereur Napoléon III et l'Italie* (1859); *Le pape et le congrès* (1859); *La France, Rome et l'Italie* (1861); *Le droit public et l'Europe moderne* (1875) — His elder brother, DUBREUIL HELION, COMTE DE LA GUÉRONNIÈRE, was an exponent of legitimism and opposed the July monarchy and the Second Empire, but took a more favorable attitude towards the Republic. Among his numerous political writings are *La Prusse et l'Europe* (1867); *La France et l'Europe* (1867); *L'Esprit du temps et de l'avenir* (1868); *La crise* (1869); *La politique nationale* (1869); *La Prusse devant l'Europe* (1870); *La catastrophe de la France* (1871); *L'Internationale et la guerre civile en France* (1871); *L'Homme devant l'histoire* (1872); *M. Thiers* (1876).

LAGUERRE, là gâr', EDMOND NICOLAS (1834-86). A French mathematician, born at Bar-le-duc. In 1853, when he was a candidate for the Ecole Polytechnique, he attracted great attention by an article in the *Nouvelles Annales de Mathématiques* supplementing the work of Poncelet. He was an artillery officer at Metz and Strassburg and in 1864 returned to Paris as a teacher at the Polytechnique. In 1870 he published the first part of an important work on geometry. He became a member of the Institute in 1883 and soon afterward was made professor of mathematical physics at the Col-

lège de France. Most of his writings appeared in mathematical journals, but he published separately *Théorie des équations numériques* (1880) and *Recherches sur la géométrie de direction* (1885). Consult the preface by H. Poincaré to Laguerre's *Ouvres* (2 vols., Paris, 1898-1905), edited for the Academy of Sciences by Hermite, Poincaré, and Rouché.

LAGUERRE, (JEAN HENRI) GEORGES (1858-1912). A French lawyer and Socialist politician, born in Paris. He was educated at the Lycée Condorcet and in 1879 was called to the French bar. Participating in politics, he was elected to the Chamber of Deputies in 1883 as the representative of the Radical-Socialists, was reelected in 1885 and 1889, but failed of election in 1893. He was one of the chief supporters of General Boulanger (q.v.) in 1890. He wrote for Georges Clemenceau's *La Justice* and later became director of *La Presse*. As a lawyer, he first attracted attention by his defense of the anarchists Prince Kropotkin (q.v.) and Louise Michel (q.v.) in 1883, and of the leaders of the Decazeville strike in 1886. Laguerre became one of the greatest French criminal lawyers of his day, but in 1893 he was excluded from the Paris bar by jealous political enemies, who, on account of his connection with *La Presse*, asserted that he was involved in commercial operations incompatible with his profession; and thereafter he practiced in the provinces.

LAGUNA, la-goo'na, or **LA LAGUNA**, also called CRISTÓBAL DE LA LAGUNA. A town of the island of Tenerife in the Canaries. It is situated on the north shore, near Santa Cruz, in a beautiful plain surrounded by wooded mountains. It has wide and straight streets and large plazas and is the seat of a bishop and of a university. There are a town hall, a normal school, a seminary, a public library, and an enormous cathedral with five naves. Laguna was formerly the capital of the island. Pop., 1900, 13,152; 1910, 16,322.

LAGUNA. An important pueblo town in Valencia Co., N. Mex., 67 miles west of Albuquerque, on the Atchison, Topeka, and Santa Fe Railroad (Map: New Mexico, B 4). The inhabitants belong to the Keresan stock (q.v.) and, like all the other Pueblo Indians, are industrious and self-supporting, raising sufficient crops for their own wants, although almost their whole territory is a desert, and the Indian title, acquired under old Spanish laws, is in dispute. There are here an adobe Roman Catholic church, almost 200 years old, and a tuberculosis sanitarium. According to an official report, only 215 out of over 17,000 acres covered by their grant can be used for farming purposes, and their main dependence is an adjoining strip of fertile land along the San José River. Wool raising is carried on. Pop., 1910, 1583. See also PUEBLO.

LAGUNA. See KERESAN STOCK.

LAGUNA. A province of central Luzon, Philippines, southeast of Manila (Map: Philippine Islands, C 3). It has the form of a crescent, encircling the south and east shores of Laguna de Bay, which, together with the Province of Rizal, bounds it on the north. On the east lie the provinces Infanta and Tayabas, on the south the latter and Batangas, and on the west Cavite. Its area is 752 square miles. The surface is broken and mountainous in the central and northern portions, containing the famous Mount Maquiling with its grotto.

In the east and northwest it is more level. Mineral springs abound. The climate is variable in temperature, but moist. The province is watered by numerous streams and lakes, which in the rainy season form fever-breeding swamps. Laguna is known as the garden of the Philippines, and quantities of sugar, palay, corn, coffee, and coconuts, are produced. The production of coconut oil is a flourishing industry, and there are also manufactures of bolos and furniture. There are many good roads, and a railway skirts the south shore of the bay from Santa Cruz, the capital, to Manila. Pop., 1903, 148,606. The inhabitants are exclusively Tagalogs and are all more or less civilized. Capital, Santa Cruz (q.v.).

LAGUNA DE BAY, dà bi. A navigable fresh-water lake in the southern part of Luzon, Philippines, about 45 miles long and 15 miles wide in its broadest part (Map: Philippine Islands, C 3). It has the island of Talim near its centre, and on its shores are a number of important towns, chief of which are Morong and Santa Cruz. It is connected with Manila Bay on the west by the Pasig River, about 10 miles long.

LA HABANA. See HAVANA.

LA HARPE, là hîrp, FRÉDÉRIC CÉSAR DE (1754-1838). A Swiss statesman, born at Rolle in the Canton of Vaud. He studied at Geneva and Tübingen and went in 1782 to St. Petersburg, where he became tutor of the future Alexander I and imbued him with certain democratic principles. He was a passionate republican and a Vaudois patriot, and his writings stirred up revolts against the tyranny of the Bernese, but brought about his dismissal by the Emperor of Russia and caused him to be outlawed by the Swiss authorities. In 1795 he went to France to solicit the intervention of the Directory in Swiss affairs, and in 1798, when French troops had instituted an Helvetic republic, La Harpe became one of its directors. The restoration of the cantonal system sent La Harpe a fugitive to Paris in 1800, where he lived till 1814. When the allies entered Paris, Alexander I greeted his old tutor affectionately, gave him the rank of general, and at his entreaties insisted in the Congress of Vienna on the rights of the Canton of Vaud. In 1816 La Harpe settled at Lausanne, where he died. Among his writings may be mentioned *Essais sur la constitution du pays de Vaud* (Paris, 1796).

LA HARPE, JEAN FRANÇOIS DE (1739-1803). A French critic, born in Paris, Nov. 20, 1739. He began his literary life as a satirist with *Héroïdes* (1759) and followed this with four mediocre classical tragedies *Waruul* (1763, perhaps the best), *Timoléon* (1764), *Pharamond* (1765), and *Gustave Wasa* (1766). He visited Voltaire at Ferney from 1766 to 1768; and then became literary critic of the *Mercure de France*, continuing to write dramas and gaining academic recognition. He was elected to the Academy (1776) and in 1786 became professor of literature at the Lycée. His lectures there, published as *Cours de littérature ancienne et moderne* (1789-1805), though narrow and superficial, were once highly esteemed. His best critical work is found in his analysis of seventeenth-century writers. His *Commentaire sur Racine* (1795-96) shows sound critical judgment. He joined the revolutionary movement, but was imprisoned during the Directorate and

from a Voltairean became an ardent Catholic. In criticism La Harpe stands on the threshold of the Romantic revival as the talented representative of a sterile conservative classicism. His *Œuvres*, in 16 volumes, appeared in 1821. Consult Sainte-Beuve, *Causeries du lundi*, vol. v (Paris, 1856), and Bruno Edlich, *Jean François de La Harpe als Kritiker der französischen Literatur im Zeitalter Ludwigs XIV* (Leipzig, 1910), containing a bibliography.

LAHIJAN, la'hä-jän'. An important trading town of Persia, in the Province of Gilan, 5 miles from the south shore of the Caspian Sea, 25 miles east of Resht (Map: Persia, D 4). It was formerly the capital of the Province of Gilan. Silk is the chief product. Pop. (est.), 5000.

LA HIRE, la' er', ETIENNE DE VIGNOLLES (c.1390-1443) A French general. He was born in Gascony, and the name La Hire, given him by his enemies, was adopted by him. He fought bravely at Coucy in 1418, but had to surrender to the Duke of Burgundy; was at the siege of Alençon in 1421 and in the battle of Verneuil in 1424, and in 1429 was with Jeanne d'Arc at Orléans. In 1431 he was captured by the English in an attempt to release Jeanne from her imprisonment in Rouen, but was ransomed by the French cities and assisted in the capture of Chartres (1432). He died at Montauban, after many honors had been conferred on him by Charles VII. On account of his companionship with Jeanne d'Arc and of the many stories told of his bravery and wit, he is one of the most popular of the French chevaliers, and his name is often used at cards in French for the knave of hearts.

LA HIRE, PHILIPPE. See DE LA HIRE.

LAHME, lā'me, DER. See HERMANN VON REICHENAU.

LAHN, län. An affluent of the Rhine, joining it a few miles above Coblenz. It rises in Westphalia and flows through Hesse-Nassau and Hesse. Its length is 135 miles and it is navigable by means of numerous locks up to Giessen, about 90 miles from its mouth. On its banks is Ems, and its valley is followed by a railroad line.

LA HOGUE, or LA HOUGUE. See HOGUE, LA.

LA HONTAN, la on'tän', ARMAND LOUIS, BARON DE (1666-1715). A French soldier and traveler. He was born at Mont-de-Marsan in Gascony and went to Canada as a common soldier in 1683. He was stationed at various military posts, made several expeditions against the Indians, visited Michilimackinac and Sault Ste. Marie in 1688 and Green Bay in 1689, and claimed to have been on the upper Mississippi. While on his way to France in 1692, as bearer of dispatches from Count Frontenac, he stopped at Placentia Bay, Newfoundland, and defended the place bravely against an English force. He was made King's lieutenant in Newfoundland and Acadia, but quarreled with the Governor and was dismissed from the service. He traveled through Portugal, Spain, Holland, Denmark, and England, settled in Hanover, and died there. In 1703 La Hontan published at The Hague an account of his adventures in America, under the title *Nouveau voyage dans l'Amérique septentrionale*, and followed it up the next year with a *Suite des voyages de l'Amérique*, treating chiefly of the lake region of North America and the upper waters of the Mississippi. Consult V. H. Paltsits, *Bibli-*

ography of Writings of Baron Lahontan (New York, 1905).

LAHONTAN, LAKE A former extensive lake of the Great Basin region in western Nevada. See LAKE LAHONTAN.

LAHORE, là-hör'. A division of the Punjab (q.v.), British India, comprising the districts of Lahore, Amritsar, Montgomery, Gurdaspur, Sialkot, and Gujranwala (Map: India, B 2). Area, 12,387 square miles. Pop., 1901, 5,101,882; 1911, 4,656,629. It extends from the Himalaya to Multan, along the right bank of the Sutlej. The surface, save near Dalhousie hill station in Gurdaspur, is an alluvial plain, irrigated by the Bari Doab Canal and the Sutlej with ramifying channels. Wheat is the principal crop, and barley, maize, rice, cotton, sugar, tobacco, oil seeds, and the opium poppy are cultivated. Capital, Lahore.

LAHORE. The capital of the Punjab, British India, and of the division and district which take their names from it, in lat. 31° 35' N. and long. 74° 20' E, on the left bank of the Ravi River and at the junction of the railways from Calcutta, Peshawar, and Karachi (Map: India, B 2). It is distant by rail 32 miles from Amritsar, 298 from Delhi, 784 from Karachi, 1280 from Bombay, and 1252 from Calcutta. The city is the residence of the Lieutenant Governor of the Punjab and the seat of an Anglican and of a Roman Catholic bishopric. Lahore consists of the native town, about 1 square mile in area, and, to the south and east, the European quarter, or civil station. Three miles east of the latter is the Lahore Cantonment, which until 1906 was called Mian Mir. The native city, to which access is had by 13 gates, was formerly surrounded by a brick wall, 30 feet in height, and a moat. During the years subsequent to 1849, when the government was given over to the British by the Maharajah Dhulip Singh, the city underwent considerable improvement; the walls were reduced in height and finally razed, and the moat filled in, and their site is occupied by a garden encircling the city on all sides but the north. The citadel or fort stands upon an eminence at the northeast. The city is mean and gloomy in appearance, with narrow, winding streets and blind alleys; but this is offset by splendid buildings of the Mogul period. These are especially to be noted on the northeast side, where "the mosque of Aurungzebe, with its plain white marble domes and simple minarets, the mausoleum of Ranjit Singh, with its rounded roof and projecting balconies, and the desecrated façade of the Mogul palace, stand side by side in an open grassy plain, exhibiting a grand *coup d'œil*." In 1849 the environs were an expanse of crumbling ruins, and the European residences were grouped around the old cantonment south of the city; the European quarter spread gradually eastward and now covers a considerable area that was formerly jungle and ruins. The older part of the European quarter, south of the native city, is known as Anarkali; here are a public garden, the Secretariat buildings, town hall, museum, Punjab University, Punjab Public Library, Government College, Senate Hall, the new University Hall, the Mayo and Lady Aitchison hospitals, and other public buildings. The Old Mall, an excellent road, connects Anarkali with the native city. East of Anarkali is the European quarter known as the Naulakha. It is known also as the railway colony, for situ-

ated here are the station, the extensive workshops of the Northwestern Railway (with some 5000 employees), and a railway school building. The Upper Mall extends southeast to Lawrence and Montgomery halls (surrounded by a large public garden) and Government House. On or near this road, which is the main thoroughfare of the newer residential quarter, are various government offices, the chief court, most of the European shops, and the Anglican cathedral, a fine building in the later Early English style, consecrated in 1887. The Aitchison Chiefs' College is beyond Government House towards the Lahore Cantonment.

Formerly Lahore was famous for the manufacture of superior silk cloths of Bokhara thread and the production of gold and silver embroidery, glass, enamel, and arms. The decorative arts have practically disappeared, being superseded by the manufacture of coarse and inferior silks, cotton prints, vegetable oils, candles, soap, etc. A good quality of woolen stuffs is produced. Lahore is an important trading centre. The municipality was created in 1867. A system of water works was opened in 1881 and a drainage system in 1883. The city contains the principal educational institutions of the Punjab. These include the Punjab University (with five colleges), the medical and law colleges, a training college, the Aitchison Chiefs' College, the Mayo School of Art, and various technical and special schools, high schools, etc.

Lahore is the largest city of the Punjab. The population, excluding the cantonment, was 138,876 in 1881, 159,597 in 1891, and 186,884 in 1901 (including 113,253 Mohammedans, 62,922 Hindus, 5964 Sikhs, and 4199 Christians); including the cantonment, the population in 1901 was 202,964, and, in 1911, 228,687.

The traditional founder of Lahore is Lava, son of Rama, but it is probable that the city was not founded before the first century A.D. In 1036 it became the capital of the Ghaznavid dominions east of the Indus, but for about 60 years subsequent to 1042 was governed by viceroys. During the reign of Masud III (1099-1114) it was made the Imperial capital. The city was taken by the Mongols in 1241 and put to ransom in 1246. It was rebuilt by Balban in 1270, but 15 years later the Mongols returned and for a long period made numerous raids. From 1398, when it was taken by a detachment of Timur's army, it seems to have been desolate until rebuilt by Mubarak Shah in 1422. About 100 years later it fell to Babar. Lahore reached its greatest splendor under Mongol rule and particularly during the reign (1556-1605) of Akbar, who held his court there from 1584 to 1598. Under Akbar the city rapidly developed, exceeding its present area and population. The architectural importance of Lahore increased under Jahangir (died 1627), and during the reign of his son, the great Shah Jahan, the city probably had a circuit of some 16 or 17 miles. Under Aurungzebe, Shah Jahan's son, the population began to decline, and the architectural history of Lahore virtually came to an end. From the accession of Bahadur Shah until in 1798 the authority of Ranjit Singh confirmed the Sikh power in the Punjab, Lahore was subjected to successive invasions and conquests, and it gradually sank into a crumbling ruin. Ranjit Singh made the city once more the centre of a flourishing kingdom, but anarchy followed his death in 1839, and an invasion of British

territory resulted in war and the British occupation in 1846, when the British resident became the real authority at Lahore. The government was resigned to the British by Dalip Singh in 1849.

LAHORE, VISCOUNT HARDINGE OF. See **HARDINGE**, SIR HENRY.

LAHR, lār. A manufacturing town of the Grand Duchy of Baden, Germany, situated in the valley of Schutter, 53 miles south-southwest of Karlsruhe (Map: Germany, B 4). The municipal park and the museum of antiquities are noteworthy. Lahr has manufactures of linen and woolen cloth, hats, horsehair cloth, artificial flowers, leather, snuff, cartons, umbrellas, and toys. There are also lithographic and printing establishments. It has a good trade in wine. Pop., 1900, 13,576; 1910, 15,191.

LAIBACH, lî'bâg, or **LAYBACH**. The capital of the Austrian Crownland of Carniola, situated on the Laibach River, 45 miles northeast of Trieste (Map: Austria, D 3). It contains a number of fine promenades and squares, adorned with monuments, among which the most notable is the bronze bust of Radetzky by Fernkorn. The best of the ecclesiastical edifices is the Italian cathedral of St Nicholas, with a high dome. Other noteworthy buildings are the town hall, the government headquarters, the palace of justice, the agricultural building, the old castle on the Schlossberg dominating the town, and the palaces of the Bishop and the counts of Auersperg. The educational institutions include Gymnasias, a seminary for teachers, a theological seminary, a school of commerce, two schools of music, a library of 61,000 volumes, a theatre, and a museum. Slovene is the official language, and Laibach is the focus of the movement to promote its use. Laibach manufactures cotton goods and other textiles, church bells, tobacco, and machinery, wire, paper, lace, pottery, leather, fire hose, and iron products. It has large railway repair shops and some commerce. It is the seat of a prince-bishop. In the neighboring Laibach Fen have been found interesting lake dwellings. Pop., 1900, 36,547, 1910, 47,127, mostly Slavic. Laibach is believed to occupy the site of the Roman Emona or Hemona. It flourished under the rule of the Franks, and in 1277 passed under the rule of the house of Hapsburg. It was the seat of the French dominion of the Illyrian provinces from 1809 to 1813. In 1821 Laibach was the scene of the famous congress of monarchs, convened for the purpose of putting an end to Carbonarism in Italy and of restoring Naples and Sicily to their former political status. The results of the congress were the passing of resolutions establishing among European nations the right of armed intervention in the affairs of any neighboring states in case of internal political disturbances, and the occupation of Naples by Austria. Most of the larger European countries were represented at the congress, against whose action England protested.

LAIDLAW, WILLIAM (1780-1845). Friend and amanuensis of Sir Walter Scott. He was born at Blackhouse, Selkirkshire, and after farming with little success became (1817) steward to Scott, who placed a high value on his counsel and friendship. Laidlaw wrote several lyrics, but the simple ballad "Lucy's Flittin'" alone is remembered. With Sir Walter's assistance he compiled part of the *Edinburgh Annual Register* after 1817.

L AIDLER, HARRY WELLINGTON (1884-). An American Socialist author and lecturer. He was born in Brooklyn, N. Y., and was educated at Wesleyan (A.B., 1907), at the Brooklyn Law School of St. Lawrence University (LL.B., 1910), and at Columbia (Ph.D., 1914). He served as a reporter on the Brooklyn *Daily Eagle* in 1907-10, was admitted to the New York bar, and studied social conditions in Europe in 1914. In 1910 he became organizing secretary of the Intercollegiate Socialist Society, an organization similar in many respects to the Fabian Society of England, and in 1912 he became editor of the quarterly, *The Intercollegiate Socialist*. His treatise, *Boycotts and the Labor Struggle* (1914), is an authoritative and comprehensive work on that subject.

L'AIGLON (THE EAGLE). A drama by Edmond Rostand, produced in Paris March 15, 1900, with Sarah Bernhardt in the title rôle. The subject is the young Duke of Reichstadt, the unfortunate son of Napoleon Bonaparte.

L AINEZ, L'ññth, DIEGO. See LAYNEZ

L AING, lāng, ALEXANDER GORDON (1793-1826). A British explorer, born in Edinburgh. He was educated at the university of his native city and in 1810 became an ensign in the Edinburgh Volunteers. The next year he went to the West Indies, where he served until 1822, when he took command of a company in the Royal African Corps and was ordered to Sierra Leone. During the next two years he made extensive explorations in the neighboring countries and in 1824, during a visit to England, was ordered by the Colonial Secretary to undertake a journey by way of Tripoli and Timbuctoo to the source of the Niger. He was the first European to reach the latter city, which he entered on Aug. 18, 1826. He left it about September 24 and two days later was murdered by Arabs who were probably acting under instructions from the Bashaw of Tripoli. An account of his earlier explorations was published in 1825 under the title *Travels in Timmannee, Kooranko, and Soolima, Countries of Western Africa*. Consult Robert Chambers (ed.), *Biographical Dictionary of Eminent Scotsmen*, vol. ii (Glasgow, 1830), and Thomas Nelson, *Memoirs of Oudney, Clapperton, and Laing* (Edinburgh, 1830).

L AING, DAVID (1793-1878). A Scottish antiquary, born and educated at Edinburgh. He became an apprentice in his father's bookstore, traveled abroad to buy books, met Lockhart, and became a friend of Scott. He was secretary of Scott's Bannatyne Club and editor of many of its publications. He was made honorary professor of antiquities for the Royal Scottish Academy in 1854. His many works include the following: *The Select Remains of the Ancient Popular Poetry of Scotland* (1821), *Fugitive Scottish Poetry* (1823-25), *The Poems of William Dunbar* (1834), the first collected edition; *Lauder's Memorable Occurrences* (1840), *Letters and Journals of Robert Baillie, 1637-62* (1841), *The Collected Works of John Knox* (1846-64), *Notes of Ben Jonson's Conversations with Drummond of Hawthornden* (1842), *Garden's Theatre of Scottish Worthies* (1878), besides several important works on etchings and engravings.

L AING, GORDON JENNINGS (1869-). An American classical scholar, born at London, Ontario, Canada. After graduating from the University of Toronto (1891), he taught Latin and Greek at Whetham College, Vancouver, Brit-

ish Columbia (1892-93), and at the University of Toronto (1893-95), and then was fellow in classics at Johns Hopkins, where he took the degree of Ph.D. in 1896. After a year at the American School of Classical Studies in Rome (1896-97) and service as lecturer in Latin at Bryn Mawr College (1897-99), he became a member of the Latin department of the University of Chicago in 1899. He was managing editor of the *Classical Journal* in 1905-08, associate editor of *Classical Philology* after 1905, and general editor of the University of Chicago Press after 1908. He served also as annual professor at the American School of Classical Studies in Rome (1911-12) and was vice president of the American Institute of America (1913-14). His publications include *Masterpieces in Latin Literature* (Boston, 1903), an edition of *Selections from Ovid* (New York, 1905), and an edition of the *Phormio* of Terence (Chicago, 1908), besides articles and reviews in various learned periodicals, especially in relation to Roman topography and Roman religion.

L AING, MALCOLM (1762-1818). A Scottish historian. He was born in Mainland, Orkney, near Kirkwall, where he received his earlier education; attended Edinburgh University, and was admitted to the bar in 1785. His ability attracted some attention, but he gave up law as a profession to devote himself to historical research. His writings, although somewhat awkward in style, are thorough and accurate. He continued Henry's *History of Great Britain* (1793), and wrote a *History of Scotland from the Union of the Crowns, on the Accession of James VI to the Throne of England, to the Union of the Kingdoms* (1802).

L AING, SAMUEL (1810-97). A British author and politician, born at Edinburgh and educated at Cambridge, where he taught mathematics for a time. He studied law and entered political life as secretary to Labouchère of the Bureau of Commerce, who gave him special charge of the Department of Railway Construction. He was a disciple of Gladstone, became member of Parliament for Wick (1852), held several positions under the Liberal government, was president of the society which instituted the Sydenham Crystal Palace Exhibition (1854), and a director of railways in France, Belgium, and Canada. During 1860-65 he was Minister of Finance in India, and he wrote about that country and China. His chief publications include *Modern Science and Modern Thought* (1885), *Problems of the Future* (1889), *Human Origins* (1892).

L AIRD, lārd, DAVID (1833-1914). A Canadian statesman. He was born in New Glasgow, Prince Edward Island, and was educated at the Presbyterian Theological Seminary, Truro, Nova Scotia. He founded and became editor of the *Patriot* of Charlottetown. He sat in the Assembly of his native province and as a member of the Executive Council was a delegate to Ottawa to negotiate for the union of Prince Edward Island with the Dominion government. After the union he was a Liberal member of the Dominion Parliament, served as Minister of the Interior (1873-76), and was in 1876-81 Lieutenant Governor of the Northwest Territories. In 1874, as Commissioner, he concluded a treaty with the Indians of the northwest by which they gave up to the government about 75,000 square miles of territory. In 1881 he returned to

Prince Edward Island and failed in 1882 and in 1887 to be reelected to the Dominion House of Commons. From 1898 to 1900 he was Indian Commissioner for Manitoba and the Northwest Territories, and in the latter years removed to Ottawa to serve in an advisory capacity on Indian affairs. While in office, he concluded several treaties whereby Indian titles to land became extinguished and reverted to the crown. He published *Our Indian Treaties* (1905).

LAIRD, JOHN (1805-74). An English shipbuilder, born in Greenock, Scotland. He is said to have been the first builder of iron steamships and for a long time was the head of the firm of John Laird and Sons, iron shipbuilders and engineers at Birkenhead, near Liverpool. Among the vessels built by his firm were the *John Randolph*, said to have been the first iron vessel used in American waters, the *Nemesis*, the first iron vessel equipped with guns, and the famous Confederate vessel *Alabama*. He retired from the active management of the business in 1861, after which time the firm became known as Laird Brothers. From 1861 until his death he was a member of Parliament.

LAIRD-MAIR. See LAWRENCE, LORD.

LAIRESE, lā'rēs, GÉRARD DE (1641-1711)

A Flemish historical painter and etcher. He was born at Liège and under the direction of his father received a liberal education in literature and art. He was also a pupil of Bertholet Flemal at Liège. At the age of 15 he painted good portraits and historical subjects. From the traditional account it seems that he lived in great poverty at Utrecht and in the neighborhood, painting signs for a living, until summoned by a picture dealer to Amsterdam, where he speedily became celebrated. He is said to have gained inspiration for painting by playing the violin. He painted with great facility, leaving above 250 works. His style was influenced by Poussin and the antique, his art being essentially Flemish, and not realistic, like the Dutch. It was sumptuous and mannered in character. In 1690 his sight became impaired, but he continued his usefulness by dictating his ideas on painting to his pupils and associates. They were collected by his son and published at Amsterdam, under the title *Het groot schilderboek* (1707-12), which, translated into English, German, and French, became a manual for the art academies of the eighteenth century.

His largest works were decorations for houses in Amsterdam and for Dutch castles. He was especially fond of mythological subjects, his religious pictures being less impressive. Among his paintings at Amsterdam (Rijks-Museum) are a "Bacchanal," "Legitimate Power," "Revolution," "Venus, Mars, and Cupid," in the Louvre are the "Institution of the Eucharist," "Cleopatra at Tarsus," and a "Dance of Children." The gallery at Cassel is also rich in his works. For the cathedral of Liège he painted a "Penitence of St. Augustine" and "Baptism of St. Augustine"; for the church of St. Ursula, at Aix-la-Chapelle, the "Martyrdom" of St. Ursula.

LAIIS (Lat., from Gk. *Aais*) The name of two Greek courtesans, celebrated for their beauty. 1. The elder Laïs was born probably at Corinth about 475 B.C. Her beauty was said to surpass that of any other woman of her time, but her greed and capriciousness were also notorious, and, when old, she grew overfond of the wine bottle. Her lovers included many

famous men, among them the philosopher Aristippus of Cyrene. 2. The younger Laïs was born probably in Sicily and is said to have been brought to Athens when still a child. She sat as a model to the painter Apelles. Falling in love with a certain Thessalian, she accompanied him to Thessaly, where, it is said, she was stoned to death by some jealous women.

LAISSEZ-FAIRE, lā'sā' fār (Fr., let do), **LAISSEZ-PASSER, lā'sā' pāsā'** (Fr., let go on). As originally used, the first of these phrases represents a demand for freedom from onerous restrictions in production, the second for freedom of exchange. Under the mercantile system industry and commerce were subject to a mass of regulations which hampered the individual even in matters of trifling importance. A reaction in thought set in against this excessive regulation, culminating in the laissez-faire teachings of the physiocrats (q.v.). The expression "laissez-faire" is said to have been employed before 1680 by Legendre, a merchant, in a reply to a question of Colbert concerning the needs of industry. The idea appears more definitely worked out in the writings of Boisguillebert (1712), and as early as 1735 the Marquis d'Argenson had declared that laissez-faire should be the watchword of every public power. "To govern better, it is necessary to govern less," he writes. The view did not become common until the latter half of the eighteenth century. The maxim *laissez-faire et laissez-passer* appears to have been popularized by Gournay, to whom it was attributed until within recent years.

The doctrine secured a wide following both in France and in other European countries. In England Adam Smith and the whole English classical school of political economy manifest its influence. The French classical economists were likewise champions of laissez-faire, and numerous followers appeared in Germany. In the latter half of the nineteenth century the doctrine of laissez-faire lost ground, however. The German school of economics, which emphasized the importance of the economic functions of government, seemed for a time to have completely overthrown the older doctrine. A reaction has, however, set in which promises to restore to favor a modified form of the principle of laissez-faire.

Adherents of the theory have never stood for the view that the individual should be left free to do as he pleases in other matters than trade and industry. The doctrine is not one of anarchy, as it has been made out to be by its opponents. Nor does it deny that government has certain economic functions to perform; although, indeed, an obscure follower of Bentham, Sir J. Bowring attempted to show that political economy looks for nothing from the state except security for industry. The adherents of the theory would, as a rule, agree that the state should perform those functions which cannot be adequately performed by individuals; they would also leave to the state functions which primarily redound to the public good. See FREE TRADE; PHYSIOCRATS; POLITICAL ECONOMY; INDIVIDUALISM.

Consult, for brief summaries of the history of the doctrine, J. J. Lalor, *Cyclopedia of Political Science*, vol. ii (New York, 1893); Palgrave, *Dictionary of Political Economy* (London, 1894-99); McLaughlin and Hart, *Cyclopedia of American Government*, vol. ii (New York, 1914).

The most satisfactory history of the origin of the phrases is August Oncken, *Die Maxime Laissez-Faire et Laissez-Passer* (Bern, 1886). A brief account is given by Higgs, *The Physiocrats* (London, 1897); William Cunningham, *Industrial Revolution, Being the Parts Entitled Parliamentary Colbertism and Laissez-Faire* (Cambridge, 1908); also J. W. Garner, *Introduction to Political Science* (New York, 1910).

LAISTNER, list'nēr, LUDWIG (1845-96). A German author, born at Esslingen, Württemberg. He studied theology at Tübingen, had charge of a pastorate for two years, and was a private tutor in Munich, where he devoted himself exclusively to literary pursuits after 1880, and whence he removed to Stuttgart in 1889, as literary adviser of the publisher Cotta. Besides *Barbarossa's Brautwerber* (1875), an epic poem, and *Novellen aus alter Zeit* (1882), he wrote: *Nebelsagen* (1879), contributions to German mythology; *Der Archetypus der Nibelungen* (1887); *Das Rätsel der Sphinx, Grundzüge einer Mythengeschichte* (1889); *Germanische Volkernamen* (1892); and with Paul Heyse he edited *Neuer deutscher Novellenschatz* (24 vols., 1884-88).

LAITY, lā'y-tī (from *lay*, from OF., Fr. *lai*, from Lat. *laicus*, from Gk. *laikos*, *laikos*, relating to the people, from *laos*, *laos*, people). In Church relations, the name given to all persons who do not belong to the clergy (q.v.). Among Catholics the term has a stricter meaning than among Protestants, for the latter do not make the same profound distinction between those especially dedicated to the service of the Church and the general body of worshippers. The Roman Catholic church claims for its priesthood a direct and special mission supernaturally bestowed to teach and govern the faithful laity in all matters concerning religion. Most Protestant bodies deny this sharp distinction and regard all members as of the same spiritual grade. In modern usage the term is applied in a similar sense to distinguish those who are not in a learned profession from its members; thus, those who are not lawyers are "laymen" to the legal profession.

LAIUS. See **EDIPUS**.

LAJARD, lā'zhār', JEAN BAPTISTE FÉLIX (1783-1858). A French archaeologist, born in Lyons. He was attached as secretary (1807) to the French Ambassador to Persia and spent several years in that country exploring and studying Oriental religions, particularly in their effect upon Greek culture. He also made a collection of Babylonian cylinders which are now in the National Library in Paris. The value of his researches was recognized, and after his return to France he held several important offices. Much of his writing was contributed to the *Académie des Inscriptions et Belles Lettres*, to which he was elected in 1830. His works include *Recherches sur le culte, les symboles, les attributs et les monuments figurés de Vénus en Orient et en Occident* (1837-47) and *Recherches sur le culte publique et les mystères de Mithra en Orient et en Occident* (1847-48).

LAJEUNESSE, lā'zhē'nēs', MARIE LOUISE CECILIA EMMA. See **ALBANI**, EMMA.

LAJOIE, ANTOINE GERIN. See **GERIN-LAJOIE**, ANTOINE.

LA JONQUIÈRE, lā zhōn'kyār', JACQUES PHÉLIX TAFFANEL, MARQUIS DE (1680-1753). A French naval officer, who went to Canada as Governor in 1749. He had previously been en-

gaged in military service—had fought the Protestants in the Cévennes (1703), was especially known for his services with Duguay-Trouin at the siege of Rio de Janeiro (1711), had been present at the battle of Toulon (1744), and had won a notable victory at Finisterre with six ships over 18 of the British. He was appointed Governor-General of Canada in 1746, but the fleet in which he had embarked was scattered by storms and never reached Quebec. In 1747 his ship was captured and himself taken prisoner to England. After his release, again appointed Governor-General of Canada, he was suspected of being a silent partner of Western fur traders, and he undoubtedly backed the zealous Abbé le Loutre in his design of securing Acadia for France against the English among the Acadians.

LA JUNTA, lā hōōn'tā. A city and the county seat of Otero Co., Colo., 64 miles south-east of Pueblo, on the Arkansas River, and on the Atchison, Topeka, and Santa Fe Railroad (Map: Colorado, F 4). It is a division point on the Santa Fe system and contains railroad yards and shops, employing 1200 men. Other industrial establishments include flour mills, an elevator, and a canning factory. The surrounding region produces cattle and sheep, cantaloupes, and alfalfa. La Junta owns its water works. Pop., 1900, 2513; 1910, 4154.

LAKANAL, lā'kā'nāl', JOSEPH (1762-1845). A French statesman and educator, born at Serres in the Department of Ariège and educated for the priesthood. When the Revolution broke out, Lakanal, who was then professor of philosophy in the college at Moulins, was sent by the Department of Ariège as a deputy to Paris. In the National Convention he gave an unqualified vote for the death of the King. Shortly afterward he was made a member of the Committee of Public Instruction and quickly rose to the head of that body. He initiated most of the important reforms tending to make education universal in France. To his efforts was also due the founding of the Ecole Normale and the Institut de France. In 1798, as commissary general of the Department of the Rhine, he reformed abuses in the army and built up the frontier against foreign invasion. During Napoleon's tenure of power Lakanal filled various subordinate positions in educational institutions in France. On the accession of Louis XVIII he was proscribed as a regicide and came to the United States. Congress voted him 500 acres of land, and a little later he accepted the presidency of the State University of Louisiana. In 1825 he resigned and retired to his plantation on Mobile Bay. Shortly after the revolution of 1830 he returned to France and became a member of the Académie des Sciences Morales et Politiques. Consult E. Guillon, *Lakanal et l'instruction publique* (Paris, 1881). See also Lakanal, *Projet d'éducation nationale* (ib., 1793), for his own account of his educational ideas.

LAKE (AS. *lacu*, from Lat. *lacus*, lake; connected with OHG. *lahha*, Ger. *Lache*, pool, OIr. *loch*, lake, Gk. *lakkos*, *lakkos*, hole). A body of standing water surrounded by land. In common usage the term "pond" is applied to very small lakes, but there is no uniformity in agreement as to where the line is to be drawn. In Scotland the word "loch" is applied to lakes and also to lakelike arms of the sea almost completely shut in by the land. In the case of the Caspian, Dead, and Aral seas the term "sea" is applied to what are true lakes.

General Characteristics. Lakes vary greatly in form, depth, and source of their water supply. They are usually elongated in the direction of the inlet and outlet, owing to the fact that they commonly arise from some interference with the free drainage along a preëxisting river valley. Often the outline is irregular because the dam at the outlet causes the water to rise up into tributary valleys. In some cases the water rises over low divides, forming many islands and a very irregular coast, as in Champlain, Winnetoesaukee, and other lakes. Others may have straight shore lines following the valley walls or may occupy small circular basins. In depth lakes vary greatly; thus, Great Salt Lake has a depth of less than 25 feet, and Crater Lake, in Oregon, of 2000 feet. They may occur at any elevation above the sea, and some, like the Dead Sea, are even below sea level. Excepting in very severe climates deep lakes do not freeze in winter, because it is necessary to reduce the entire lake to 39° F. before the surface can freeze. Some lakes have no surface tributaries, but receive their waters from the rains and from underground sources, others have many tributaries. Usually the largest feeder or inlet is at the upper end of the lake. The outlet in most cases is limited to a single channel.

Great floods raise the level of all but the larger lakes, and wet seasons cause the surface to rise by the increased amount of water supplied from the rain. This rising may come so long after the wet period that the connection is not readily discovered. There is also a slight tide on the larger lakes, though ordinarily unnoticeable, but in V-shaped bays its height may be so increased as to be easily detected. Steadily blowing wind, drifting the water before it, causes well-defined currents of water. On smaller lakes, when heavy rains and melting snows coincide with strong wind, floods occur on the deltas. The lake level is then raised in some parts and lowered in others by the wind, and the water of the streams cannot flow off, consequently flooding the delta. Still another change of level of lakes is due to a difference in the air pressure on the two ends of the lake. A low pressure on one end and a high on the other disturbs the equilibrium of the water; it is pushed down under the heavier air and rises under the low pressure. This starts an undulation of the lake water, which is analogous to the rocking of a basin, and a wave passes up and down the lake, slowly dying out with each succeeding undulation. To such changes in lake level the name "seiches" is applied.

Lakes without Outlets. In all countries there is evaporation from the surface of lakes, so that less water flows out than enters, there may also be loss through seepage into the earth. On account of this, even in moist climates, lakes with a small drainage area may not rise to the point of outflow. This is true of small basins in sand-dune regions or in sandy glacial deposits, where the water speedily soaks into the loose soil. Slowly, however, the washing in of clay and the growth of vegetation form a more impervious bottom, so that first swamps, then ponds, are caused. Little kettle-shaped basins in terminal moraines often have such a small drainage area that they do not rise to overflow, or possibly overflow only in periods of heavy rains or melting snows. Deep lakes in volcanic craters, like Crater Lake in Oregon, also fail to reach the point of overflow, because the rainfall

and drainage are not sufficient to fill the basins. Where the climate is very arid, the lack of abundant rain, the rapid evaporation, and the seepage commonly keep the lake waters below the rim of the basin; and in deserts these conditions may completely dry up the basins, or permit them to have lakes or swampy bottoms only during rains. These effects of aridity are illustrated in the Great Salt Lake, the Dead Sea, and the Caspian Sea. As the streams entering lakes bring a load of mineral matter in solution, and as this is not carried off in the vapor, lakes without outlet have a steadily increasing load of mineral matter. Among the mineral substances thus dissolved, salt, gypsum, and carbonate of lime are usually the most abundant. In time, therefore, these substances may be present in such quantity that no more can be held by the water, and then some of the mineral load must be deposited. Thus, carbonate of lime is being precipitated on the bottom and shores of the Great Salt Lake, and salt and gypsum have been precipitated in many lakes in recent times and in past ages.

Origin of Lakes. The causes of lakes are as various as their forms. In general they may be considered as consequences of natural interference with drainage. They may exist on a new land surface, when they may be called *original consequent lakes*, since they are formed in consequence of original irregularities in the land; they may result from the normal development of rivers and may then be called *lakes of normal development*; and they may be due to some accidental interference with preëxisting drainage, when they may be called *lakes of accidental origin*. All lakes fall into one of these three great classes.

Original consequent lakes are illustrated by some of the shallow lakes of Florida, which exist in depressions on a raised sea bottom; the same condition exists in the Siberian plains and in the Argentine plains. Consequent lakes are also found in shallow basins on the beds of extinct lakes. Thus, the Great Salt Lake is in a depression in the deposits of a much larger lake that once existed there. Any other new land surface, as a lava flow, or a thick sheet of glacial drift which obscures the old land, may have depressions in which ponds or lakes develop. There are many small lakes of this origin in the glaciated belt of America and Europe.

Of lakes of normal development there are also numerous illustrations. Abandoned meanders of rivers, forming oxbow lakes, and abandoned river channels on deltas, shut off from the river by the deposit of river silt, are instances. Still another kind is found where stream development is taking place in a region of limestone or other soluble rock. Under these conditions some of the drainage is underground, the surface settles here and there by undermining, and little basins or sink holes are formed towards which the water drains. If the hole in the centre becomes filled, ponds are caused. The growth of alluvial fans by streams coming from a mountain into a more level valley sometimes dams the river in the main valley. Thus, Tulare Lake in California is made by a broad, low, alluvial fan made by King River, which comes down from the Sierra Nevada.

By far the most common cause for lakes is some accident to a stream, so interfering with its normal development as locally to transform its valley to a basin. An avalanche across a river

dams back a lake, and the growth of a mountain barrier makes a still greater dam. The warping of valleys during mountain growth also makes basins. Lake Geneva in the Alps has been ascribed to this origin. There are basins where the rocks across a valley have been faulted—e.g., in southern Oregon, in Ireland, and in the case of the Dead Sea. When the land has subsided and the sea entered the mouths of river valleys, the building of bars across the drowned valleys often shuts in the water, forming lakes. These may be made salt by the occasional overflows of the sea, or they may be completely disconnected from the sea. Such lakes are illustrated by the shut-in bays on the south shore of the Great Lakes. Sinking of parts of the land during earthquake shocks forms basins, as in the "sunk" country of Arkansas, in the Mississippi valley, that was shaken by the earthquake of 1811. Lava dams hold back river water, as is illustrated in the Auvergne region of central France; by Snag Lake, near Mount Shasta; by the Lake of Tiberias, in the Jordan valley; and by many other lakes in volcanic regions. After the volcanic energy has subsided volcanic craters are occupied by lakes, as in the Eifel region of Germany; Lake Nemi, near Rome, Averno, near Naples; and many other places. Such lakes are especially large and deep when the crater bottom has subsided, as in Crater Lake, Oregon. But perhaps the most important single cause for lakes is glaciation. By moraine dams and by dams of other classes of glacial deposits a vast number of lakes in northeastern America and northwestern Europe have been formed. Without doubt the number of glacial lakes and ponds in northeastern America and northwestern Europe is several hundred thousand. There are estimated to be 10,000 lakes in Minnesota alone, due in one way or another to the Pleistocene ice sheet.

It is found that glaciated regions are characterized by an abundance of lakes, while unglaciated regions have relatively few. In addition to the deposit of materials forming a dam across stream valleys, glaciers have scoured out many basins, known as rock basins. Seneca and Cayuga Lake valleys in central New York are regarded by some geologists as formed in this manner; the Great Lakes owe at least a part of their depth to this cause, and the same is true of some of the Alpine lakes, notably the Italian lakes Como, Lugano, and Maggiore. Many lakes are the result of a combination of causes. For example, the Great Lakes are evidently in old river valleys, deepened to some extent by glacial erosion, further deepened by a warping of the earth's crust, and with their depth still further increased by dams of drift in the preexisting valleys. The Alpine lakes also seem to combine valley warping, glacier erosion, and glacial-drift dams among their causes.

Destruction of Lakes. Lakes are normally of brief duration, from the standpoint of geological time. Consequently lakes are mostly of recent origin and are especially abundant in regions where some recent accident has happened to drainage; as, e.g., where glaciers have been, or where lava flows have recently overspread areas of country. Since lakes act as catchment basins for sediment, they are soon filled by the contributions brought by the incoming streams, by rain wash, by winds, and by waves. Much of the finer sediment settles in the lake at a distance from the shore, but most of the coarser

material accumulates near the shore and especially in the river deltas. These grow out into the lake, forming flats at the head of the lakes and protruding deltas on the margin. In some cases, where the sediment supply is abundant, as in the Swiss lakes, which receive glacier-fed streams, the growth of deltas from opposite sides of the lake has cut a single lake in two parts. This is clearly illustrated in the case of Lakes Thun and Brienz, which are divided by the delta deposit on which Interlaken is situated.

As lakes are shallowed by sediment deposit, organic contributions help finally to fill them. Various forms of vegetation, including lilies, reeds, rushes, cane, and sphagnum, are very effective in this last stage of lake destruction. When finally filled, the lake becomes a swampy plain, the rivers then build the plain up into dry land in their establishment of a slope or grade across the plain.

Lakes are not always destroyed solely by filling. The outlet stream is always eroding at the barrier, though this work is usually slow, because the lake water has filtered out the sediment, so that the outlet is robbed of its cutting tools. Thus, the Niagara, in flowing from Lake Erie, has cut away but little more of the barrier than the loose soil and consequently flows practically on the surface of the plain. Where the outlet passes through unconsolidated material it may rapidly lower the lake level. If a condition like that at Niagara could exist near a lake, the eating back of the falls would in time reach the lake and rapidly drain it. This will not happen in the case of Niagara, because the layer which causes the cataract dips towards the south, and the fall will disappear before Lake Erie is reached.

A lake may also be destroyed by a change of climate. Thus, a series of lakes existed in the great basin of western United States during the Glacial period, when the climate was cooler and damper. (See LAKE BONNEVILLE; LAKE LAHONTAN.) During the Glacial period large lakes also existed along the margin of the ice wherever the glacier formed a dam across north-flowing stream valleys. An enormous lake of this origin existed in the valley of the Red River of the North, to which the name Lake Agassiz (q.v.) has been given. Similar lakes appeared in the basin of the Great Lakes, while the St. Lawrence valley was ice-filled. (See LAKE IROQUOIS.) The shore lines of these glacial lakes are plainly seen along the margin of the Great Lakes and record a very complex history, with various outflows which were made available as the ice front melted farther and farther back. The deposits made in these extinct lakes form much of the soil of the land along the southern margin of the Great Lakes. Such methods of lake destruction are abnormal; the natural and usual method is filling, combined with a partial removal of the barrier over which the outlet flows.

Distribution, Area, and Depth of Lakes. Lakes of one kind or another occur in nearly all lands, but they are very unequally distributed. Since the most common cause of their formation is the disturbance of drainage by glacial action, they are normally more abundant in mountain regions or within those areas of the continents that were subjected to the Pleistocene ice invasion. Countless numbers of lakes are found in the glaciated sections of the United States, Canada, and northern Europe, including some of

the largest examples. Within the lower latitudes they are mainly confined to mountain regions, where they may be the result of local glaciers, volcanic action, crustal displacements, or of other causes. The amount of water stored in lakes is small compared with that held in the ocean. Sir John Murray estimates the volume of the lakes of the world at 2000 cubic miles; the same authority reckons the water of the ocean at 324,000,000 cubic miles. The largest fresh-water lake is Superior, but the Caspian Sea (which is really a lake, although its water is saline) has an area nearly six times as great. The following table gives particulars of area and depth for the more important lakes of the world:

	Area, sq. miles	Maximum depth, ft.
Caspian	170,000	3,000
Superior	31,200	1,008
Victoria Nyanza	26,000	240
Aral	25,000	222
Michigan	22,500	870
Huron	22,320	700
Nyassa	14,200	2,580
Baikal	11,580	5,400
Tanganyika	12,700	2,100
Great Bear	11,200	270
Erie	9,960	210
Winnipeg	9,400	70
Balkash	8,600	80
Ontario	7,240	738
Ladoga	7,000	800
Chad	6,000-40,000	8-20
Titicaca	3,200	900
Vener	2,500	292
Great Salt	1,700-2,350	60
Dead Sea	360	1,300
Geneva	200	1,000
Crater	25	2,000
Okeechobee	710-730	20

Bibliography. Geddie, *Lake Region of Central Africa* (London, 1881); Gilbert, "Topographic Features of Lake Shores," in *United States Geological Survey, Fifth Annual Report* (V. . . . 1885), Geikie, *Manual of Geology* (London, 1884), Russell, *Lakes of North America* (Boston, 1894); Whipple, *Classification of Lakes According to Temperature* (Boston, 1898); Tarr, *Physical Geography* (New York, 1897); Davis, *Physical Geography* (Boston, 1900); Salisbury, *Physical Geography* (New York, 1909); A. W. Sellards, "Lakes and Lake Basins," in third and sixth *Annual Report of the Florida Geological Survey* (1911-15); Birge and Juday, "Inland Lakes of Wisconsin," in *Wisconsin Geological Survey, Bulletin 27* (1914). See GEOLOGY.

LAKE. A dye. See COCCIDÆ.

LAKE, GERARD, first VISCOUNT OF DELHI AND LEWISARREE (1744-1808). An English general. He was born July 27, 1744; entered the army when only 14 years of age, and fought in the Seven Years' War. He served in America in 1781 under Lord Cornwallis; with the Duke of York in Flanders (1793-94), acquitting himself brilliantly at Lincelles; and as commander in chief in Ireland, defeated the rebels at Vinegar Hill, near Wexford, June 21, 1798, and the French invading troops at Bellinamuck, near Cloone, Sept. 8, 1798. From 1790 to 1802 he was member of Parliament for Aylesbury. In 1800 he went to India as commander in chief and captured Delhi in 1803 by an adroit strategic movement. He also took Agra and continued his successful campaign by the decisive battles of Aligarh and Lewisarree, defeating Sindia, the

Gwallor ruler, and gaining possession of all his dominions north of the Jumhal River. For his services General Lake was raised to the peerage, and after the campaign of 1804-05 against Holkar, Maharajah of Indore, he was created Viscount. He died in London, Feb. 20, 1808. Consult Wilkinson (ed.), *From Cromwell to Wellington* (London, 1899), and Pearse, *Memoir of the Life and Military Services of Viscount Lake* (ib., 1908).

LAKE, KIRSOPP (1872-). An English biblical scholar, born in Southampton. He was educated at St. Paul's School and at Lincoln College, Oxford. He was curate of Lumley, Durham, in 1895 and of St. Mary the Virgin, Oxford, in 1897-1904, and then became professor of New Testament exegesis and early Christian literature at Leyden. In search of Greek ecclesiastical manuscripts, he visited Mount Athos and other monasteries. Besides articles in the *Encyclopædia Britannica*, he published: *The Text of the New Testament* (1900), *Texts from Mt. Athos* (1902), *The Historical Evidence for the Resurrection of Jesus Christ* (1907); *The Early Days of Monasticism on Mt. Athos* (1909); *The Codex Sinaiticus* (1911); *The Earlier Epistles of St. Paul; Their Motive and Origin* (1911), *The Apostolic Fathers*, in the "Loeb Classics" (text and translation, 1912); *The Stewardship of Faith: Our Heritage from Early Christianity*, Lowell Lectures for 1913-14 (1914).

LAKE, SIMON (1866-). An American naval architect, born at Pleasantville, N. J. He was educated at the Clinton Liberal Institute, Fort Plain, N. Y., and at Franklin Institute, Philadelphia. He invented the even-keel type of submarine torpedo boat, built his first successful experimental boat in 1894, and in 1897 built the *Argonaut*, the first submarine to operate successfully in the open sea. Subsequently he built many submarine torpedo boats for the United States and for foreign countries. He invented also an apparatus for locating and raising sunken vessels, a submarine contrivance for pearl and sponge fishing, and a heavy-oil internal-combustion engine for marine use.

LAKE AGASSIZ, ág'á-sē. The name given to an extinct lake that during the late Glacial period covered a large area in the Red River valley of Minnesota, North Dakota, and Canada. Its former existence is made known by deltas at the entrance of the inflowing rivers, and by well-marked shore lines which can be traced for long distances with but slight variation in level. The investigations of Upham and other geologists indicate that the natural drainage towards the north was held back by the great ice sheet, and that the lake discharged at the southern end through a channel 50 miles long into the Minnesota River and thence into the Mississippi. The lake, which in the period of its greatest expansion was larger than all the Great Lakes combined, disappeared when the ice melted sufficiently to permit the Red River to resume its course. The lake bed is now a plain covered with glacial till and silt and yielding a fertile soil to the growth of wheat. Consult Warren Upham, "The Upper Beaches and Deltas of the Glacial Lake Agassiz," in *United States Geological Survey, Bulletin No. 39* (Washington, 1887); "The Glacial Lake Agassiz," in *United States Geological Survey, Monograph No. 25* (Washington, 1895); new ed., with supplementary notes, in G. F. Wright, *Ice Age in North*

America (5th ed., Oberlin, 1911). See GLACIAL PERIOD.

LAKE ALBERT, or **ALBERT NYANZA**, called by the natives MWUTAN-NZIGE. A large lake of British East Africa, one of the reservoirs of the Nile, situated in a deep rock basin, 80 miles northwest of the Victoria Nyanza (Map: Africa, H 4). This lake is the northernmost of a series of five that occupy the lower basins of a great rift valley that extends for 1000 miles in a general southerly direction almost to the mouth of the Zambezi River. Tanganyika and Nyassa occupy other portions of the same rift valley. The Albert Nyanza is of an oblong shape and is, approximately, 100 miles long from northeast to southwest, 25 miles broad, with an area of 1800 square miles. It is intersected by lat. 2° N. and long 31° E. The Nile issues from the northern end of the Albert Nyanza, where the outlet of the Victoria Nyanza, the Victoria Nile, discharges into the lake. At its south end the lake receives the Semliki, the outlet of the Albert Edward Nyanza. On the east it is fringed by precipitous cliffs, having a mean altitude of 1500 feet, with isolated peaks rising from 5000 to 10,000 feet. The surface of the lake is about 2100 feet above the sea; its water is fresh and sweet and comparatively shallow, the deepest soundings being less than 60 feet. The northern and western shores of the lake are bordered by a massive range of hills, called the Blue Mountains, which have an elevation of about 7000 feet. The existence of this vast lake first became known to Europeans through Speke and Grant, who in 1862 heard of it under the name of the Luta-Nzige. It was described by the natives as only a narrow reservoir forming a shallow back-water of the Nile. When Speke and Grant, after the discovery of the Victoria Nyanza, were, in 1863, descending the Nile on their return to Europe, they met, at Gondokoro, Sir Samuel White Baker (q.v.), who was ascending the river. After a toilsome march and many adventures his party came, early in 1864, in sight of the lake, which Baker named in honor of Prince Albert, who was but recently dead. The extent and general outlines of the lake were not accurately determined until 1876, when it was circumnavigated by Signor Romolo Gessi, an Italian explorer attached to General Gordon's Egyptian expedition. A year later, in 1877, Colonel Mason, an American officer in the service of the Egyptian government, made a more careful survey of the lake, fully confirming Gessi's report. See GREAT RIFT VALLEY.

LAKE BONNEVILLE, bôn'vil. A glacial lake which once occupied the basin of northwestern Utah. The shore lines still discernible along the inclosing mountain ranges show that it attained an area of nearly 20,000 square miles and a depth of 1000 feet. During its second period of expansion the lake waters overflowed to the north, draining into the Shoshone River and thus reaching the Pacific. Evaporation lowered the lake until only shallow bodies of salt water remain, of which Great Salt Lake (q.v.) is the largest. Consult Gilbert, "Lake Bonneville," in *United States Geological Survey, Monograph No. 1* (Washington, 1890). See GLACIAL PERIOD.

LAKE CARP. A carp sucker (*Carpiodes hompensi*), abundant in the Great Lakes. See CARP SUCKER.

LAKE CHAMPLAIN, BATTLE OF. See CHAMPLAIN.

LAKE CHARLES. A city and the parish seat of Calcasieu Parish, La., 217 miles by rail west of New Orleans, on the Calcasieu River, and on the Kansas City Southern, the Louisiana Western, the Lake Charles and Northern, the Louisiana and Pacific, and the St. Louis, Iron Mountain, and Southern rail roads (Map: Louisiana, C 6). It is finely situated on Lake Charles and has a fine Federal building, a Carnegie library, handsome court house, city hall, post office, and public school buildings, a large hotel, St. Patrick's sanitarium, and a park. The commercial interests are important. There are extensive lumber and rice mills, cold storage and ice plants, machine shops and other industrial establishments. The surrounding district produces long-leaf pine timber in immense quantities, and also petroleum, sulphur, salt, sugar, rice, truck, and live stock. Settled about 1850, Lake Charles was first incorporated in 1860 and adopted the commissioner form of government in 1913. Pop., 1900, 6680; 1910, 11,449; 1914 (U. S. est.), 13,481.

LAKE CHETIMACHES, shét'i-mash'. See GRAND LAKE.

LAKE CITY. A city and the county seat of Columbia Co., Fla., 60 miles (direct) west by south of Jacksonville, on the Atlantic Coast Line, the Georgia Southern and Florida, and the Seaboard Air Line systems (Map: Florida, D 1). It is the seat of Columbia College (Baptist) and was, until 1905, the home of the State Agricultural College, removed in that year to Gainesville. The city is in a productive cotton region, has important trucking and cattle-raising interests, and carries on a considerable trade in lumber, turpentine, and phosphates. By a new charter, granted in 1901, Lake City's limits were extended, and a form of government by mayor and municipal council provided. The water works and electric plant are owned by the city. Pop., 1900, 5032; 1910, 5032.

LAKE CITY. A city in Wabasha Co., Minn., 58 miles by rail southeast of St. Paul, on the expansion of the Mississippi River known as Lake Pepin, and on the Chicago, Milwaukee, and St. Paul Railroad (Map: Minnesota, E 6). It is a popular summer resort and has a public library and fine school buildings. There are grain elevators, flour mills, wagon works, a foundry, cut-glass works, a pearl-button factory, boat factory, and a nursery of 1800 acres. The water works and electric-light plant are controlled by the city. Lake City adopted the commissioner form of government in 1911. Pop., 1900, 2744; 1910, 3142.

LAKE CUSK. A fish, the burbot (q.v.).

LAKE DISTRICT. A picturesque region of mountain, lake, wood, and valley, in the counties of Cumberland and Westmoreland, England. It has been immortalized by the Lake school (q.v.) of poets and is visited annually by thousands of tourists. See CUMBRIAN MOUNTAINS.

LAKE DWELLINGS. The name applied to human habitations built usually on foundations of piles or posts, but also constructed of trunks of trees, brush, earth, or stone, and erected on the shallow borders of lakes, rivers, and other inland waters. In Switzerland they are technically called *palafittes*, in Italy *terramare*, in Ireland and Scotland *crannogs*, and the German term is *Pfahlbauten*, or pile structures. These structures abounded in Switzerland and adjacent parts of Germany, France, and Italy; but accounts and remains of such edifices occur else-

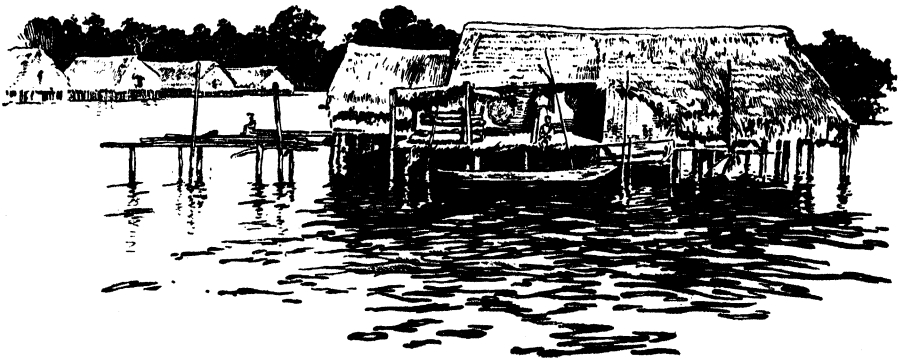
where in both hemispheres, among all types of mankind, in modern as well as in ancient times and in every grade of culture.

Celtic peoples lived on crannogs, both in Ireland and southwestern Scotland, during the wars that followed the Roman Conquest. Herodotus describes the lake dwellings erected by the Pæonians over the waters of Lake Prasias in Thrace; Hippocrates mentions them on the shores of the river Phasis in Colchis, east of the Black Sea; in Sindh, northwestern India, the habitations of pastoral tribes are elevated on piles to avoid dampness and insects; they are found in the lakes of Central Africa, throughout the Malay Archipelago and the Philippine Islands, and even in the Melanesian groups; they were constructed on the Amazon, and in Guiana; and on Lake Maracaibo they were so abundant that the first discoverers named the country Venezuela, or Little Venice.

The account of the discovery of the lake dwellings forms one of the most interesting chapters in the history of archaeology. Fishermen on the Swiss lakes had long complained that their nets

living in this form of habitation, and the Bronze age 42,500. From the station of Wangen on Lake Constance 4450 stone axes and other relics were recovered; from Moosseedorf, near Bern, 2702, covering a great variety of Stone-age implements; and from Nidau, on Lake Bienné, over 2000 artifacts in bronze of great beauty mixed with Neolithic implements. The palafittes discovered and reported are only a handful as compared with those that actually existed, and in some of those mentioned as a single station there were 20 or more separate structures. Rotting of piles, conflagrations, war, and natural catastrophes were among the causes necessitating rebuilding. That many structures were destroyed and rebuilt on their own débris is evidenced by the existence of three or more superimposed layers in the lake's bottom. Robenhausen shows three layers of piles, 100,000 in all, and at Morges, on Lake Geneva, three contiguous stations cover Swiss ancient history—one of them containing only stone, a second stone and bronze, and the third bronze alone.

The designers of the lake dwellings followed



LAKE DWELLING.

Pile village. Lake Sina Maria below Maracaibo, Venezuela. After E. M. Plumacher, United States Consul.

became entangled in obstructions on the bottom. Then came the exceptionally dry and cold winter of 1853-54, when the lakes, not receiving their usual supply of water, sank a foot lower than was ever known before, leaving broad strands and islands along the margins. In a small bay, on Lake Zurich, between Ober Meilen and Dollikon, the inhabitants, in order to enlarge the size of their gardens, built a wall down to the water line and filled the depression by dredging mud from the lake. Not only stumps of ancient piles, but hundreds of implements of handicraft made from stone, bone, and especially of antler, came up in the dredge. No metal objects were found; the only relics found were those of a very rude and primitive race.

Most of the greater lakes, including Bienné, Constance, Geneva, Morat, Neuchâtel, and Sempach, disclosed not one, but many settlements, Neuchâtel as many as 50, while many smaller lakes yielded valuable archaeological material.

Troyon attempted to reconstruct from data thus obtained the settlement of Morges, one of the largest on Lake Geneva, which was 1200 feet long by 150 broad, covering 180,000 square feet, and estimated its population at more than 1200; while the villages on Lake Neuchâtel seem to have had about 5000 inhabitants, the entire Stone age in Switzerland numbered about 31,875

two plans of construction—the crannog style, closely related to terraced mounds, and the pile building, resting above the water on posts. In the former, stones, brush, and mud were heaped up in shallow places in small sheets of water not far from shore. Short piles were driven around the edge of the tumulus, and retaining walls were rudely constructed, not to support the mass, but to protect it. On the top of these islands lived the family or clan.

In the smaller Swiss lakes, where the surf was not too strong for the sea wall, crannog foundations were erected. But on the larger lakes, where the winds often made the waters turbulent, was adopted the second method, or pile structures. After bronze axes found their way into the region, it was not difficult to fell a tree 6 inches in diameter, but before the Bronze age, in the building of Wangen on Lake Constance, Moosseedorf, Nussdorf, and Wauwyl, only stone axes were used. The lower ends of the piles look as though they had been gnawed by beavers. The amount of labor involved may be judged from the fact that at Wangen alone 50,000 piles were used.

In case the bottom was hard, stones were heaped about the bases of the piles. A dugout boat laden with stone was found at the station of Concise on Lake Neuchâtel. On the contrary,

when the soil was too soft, rough planks or frameworks of logs were fitted to the lower ends of the piles to prevent their sinking too low. The framework for the platform is a matter of conjecture, but deductions from the practices of historic and modern savages give an approximate idea of their construction. Among the Pæonians on Lake Prasias in Thrace, planks or slabs were fitted on the tops of piles out in the lake away from the shore, and a narrow causeway or bridge was the only entrance. When a new pile dwelling was projected, all the members of the tribe worked together. Afterward when the men, who were polygamists, married, they sank three piles for each wife, bringing the timber from Mount Orbelus. Each man had his own wooden hut on the platform with a trapdoor opening to the water.

The archæologist finds that with the aid of the historian and the ethnographer he has no difficulty in reconstructing the ancient Swiss lake dwellings. In the Stone age piles were not planted with absolute regularity, and at Wauwyl the crannog or Packwerkbauten style was followed. The ground was laid off in four quadrangles, the interiors of which revealed several platforms, one above another, the spaces between being filled with branches of trees, leaves, and peat. This succession of levels proves that the site was long occupied. Communication with the land was by means of boats and narrow pile bridges. The dwellings in the earliest lake villages were perhaps circular tents or huts made wholly or in part of skin, the builders transferring their land habitations to platforms. Later on there were walls consisting of wooden uprights, wattled with brush, chinked with moss, and plastered on the inside.

Troyon was convinced that the dwellings were circular like those of the historic Gauls and 10 to 15 feet in diameter, but the more sober view, from evidence and analogies, is that they were rectangular and varied greatly in dimensions. The floors were of poles or of roughly hewn planks and often in two layers, one above the other. The fireplace was either of clay or later of dressed stone. The roofs were of grass, or earlier of skins held down by poles, as may be seen among the South American tribes. There were out-structures for the domestic animals and for defense. The storage was in the nature of granaries. Cooking was by roasting or boiling. The water of the lakes was sufficient for domestic purposes. The industrial activities of the lake dwellers are shown by the abundant and diversified relics. Checker, twilled, and twined weaving and wickerwork abound. They made coiled basketry with locked and split stitches like that of the Salish tribes, chipped and hafted scrapers, saws, adzes, and other tools like the Eskimo, and excavated canoes from logs. Bears'-teeth necklaces are abundant. The pottery is somewhat like that of eastern America. Lances, spears, and barbed harpoons are plentiful, but the toggle harpoon is missing.

The animals of the lake dwellers in their remains tell an interesting story of progress in culture here. In the Stone-age lake dwellings the bones of wild animals abound (bear, badger, martin, skunk, wolf, fox, wild cat, beaver, elk, urus, bison, stag, deer, wild boar, and marsh boar); but in the Bronze-age stations the bones of wild animals are very rarely found. Domestic animals (horses, ox, goat, sheep, and dog) were all known to the Neolithic lake dwellers. The

Bronze-age people retained these and added or tamed the hog.

The flora is equally instructive. Barley, wheat in several varieties, spelt, beans, acorns, apples, and flax, in a charred state, come from the most ancient as from the most recent stations. Hemp, oats, and rye are absent from all. Heer makes the important suggestion that while the charred remains of wild species agree in the minutest particulars with those still living in Switzerland, the cultivated plants differ from all existing varieties, having smaller seed.

The history of the lake dwellings is as long as that of industrial Europe down to the complete dominion of iron. They were in Switzerland and Italy in the Neolithic age, when the people of England, France, and Spain were erecting their megalithic monuments and building dolmens. They existed during the entire Bronze age, however long that may have been, since polished stone and bronze are here and there mingled with that metal. In a few of them iron axes and knives are mixed with sword and lance blades. The Stone-age remains outnumber the others, and some of them are of vast extent.

The builders of the Neolithic lake dwellings in Switzerland and thereabout were almost certainly the thickset, brown-eyed, brachycephalic race of middle Highland Europe, with chestnut-brown hair, called Celtic by older writers, Alpine by Lapouge, Lappanoid by Pruner Bey, and Celto-Slavic by French writers generally. They bear other names, but they all refer to the same short-headed stock wedged into middle Europe between blond longheads on the north and brunet longheads on the south. The lake dwellers are supposed to have been of Asiatic origin and to have marched at their leisure entirely across Europe, between the forty-fifth and fiftieth parallels, thousands of years ago, reaching Switzerland, Belgium, and even Ireland, through Hungary and the valley of the Danube.

A variety of industrial occupations insured their material and intellectual progress, and their residence in a country abounding in game and fish and fertile land encouraged hunting, fishing, boat building, skin working, agriculture, textile arts, pottery, and gave them surplus for trade. At the same time their wealth invited the attacks of hungry and jealous neighbors and made them warlike and aggressive. All of these combined gave them solidarity in purpose and action. Many of the most artistic of the relics found are weapons and shields. There is little to show their social life, but it cannot have been greatly different from that revealed by the early historians of Germany.

Consult: Keller, *The Lake Dwellings of Switzerland and Other Parts of Europe* (London, 1878); Robert Munro, *Ancient Scottish Lake Dwellings or Crannogs* (Edinburgh, 1882); id., *The Lake Dwellings of Europe* (London, 1890); id., *Palæolithic Man and Terramara Settlements in Europe* (New York, 1912). See CRANNOGS.

LAKE EDWARD, or **EDWARD NYAN'ZA** (formerly known as Albert Edward Nyanza; name changed to avoid confusion with Lake Albert (q.v.); native name, MUTA-NZIGE). A lake in Central Africa, a little south of the equator, on the boundary line between the Belgian Congo and the British Protectorate of Uganda (Map: Africa, G 5). It lies in the same branch of the Great Rift Valley (q.v.), or structural trough, of eastern Africa which contains lakes Albert, Kivu, and Tanganyika, at an altitude of more

than 3000 feet. It is bordered on the west and east by the scarp front of the Archean plateau and is overtopped on the north by the volcanic cone of Mount Ruwenzori (q.v.), 16,000 feet high. To the south of the lake lies the wide plain of Ruchuru. The lake is elliptical in shape, with a major axis 55 miles long extending northeast-southwest and a minor axis 27 miles long; area, about 1500 square miles. To the northeast Lake Edward is connected with the smaller Lake Kafuru. The whole basin is one of the sources of the Nile, discharging through the Semliki River into Lake Albert to the northeast. The lake was discovered in 1876 by Stanley, who regarded it as the southern part of Albert Nyanza. On his subsequent visit (1889) he explored it thoroughly and named it in honor of the then Prince of Wales, subsequently King Edward VII.

LAKE ERIE. See ERIE, LAKE.

LAKE ERIE, BATTLE OF. See ERIE, BATTLE OF LAKE.

LAKE FOREST. A city in Lake Co., Ill., 28 miles north-northwest of Chicago, on Lake Michigan, and on the Chicago and Northwestern Railroad (Map Illinois, J 1). It is entirely a residential town and a place of unusual beauty, is the seat of Lake Forest College (q.v.), and has a public library, an academy, and a seminary for girls. Lake Forest was settled and incorporated in 1859. Pop., 1900, 2215; 1910, 3349.

LAKE FOREST COLLEGE. A coeducational institution of higher learning at Lake Forest, Ill. It was chartered in 1857 as Lind University, the name being changed to Lake Forest University in 1865. Under this charter a preparatory school for boys, known as Lake Forest Academy, was opened in 1858; a similar school for girls (Ferry Hall) was opened in 1869, and this was followed by the establishment of Lake Forest College in 1876. In 1902 the trustees abandoned the university idea, severed the connection between the college and the Chicago-Kent College of Law and the Northwestern College of Dental Surgery, and for the future confined their attention to the college and the two preparatory schools. The name Lake Forest University was retained for legal reasons. The total enrollment for 1913-14 was as follows: college—faculty, 21, students, 193; academy—teachers, 13; students, 117, Ferry Hall—teachers, 23; students, 120. The college campus, 50 acres, with 15 buildings, is valued at \$685,000; income-bearing endowment, \$771,000; academy, 15 acres, with 5 buildings, valued at \$235,000; Ferry Hall, 13 acres, with 3 buildings, valued at \$210,000. The libraries of the three departments contain 35,000 volumes. The president in 1914 was John S. Nollen, Ph.D.

LAKE FOREST UNIVERSITY. See LAKE FOREST COLLEGE.

LAKE GENEVA. See GENEVA, LAKE.

LAKE GENEVA. A city in Walworth Co., Wis., 71 miles northwest of Chicago, Ill., on the Chicago and Northwestern Railroad (Map: Wisconsin, E 6). It is a popular summer resort, having an attractive situation on Lake Geneva, a fine body of water, 9 miles long, ranging from $1\frac{1}{2}$ to 3 in width, and fed entirely by springs. Among the features of the city are the Oakwood and Lakeside sanitariums and the public library, and near by is the Yerkes Observatory of the University of Chicago. (For illustration, see OBSERVATORY.) There are cement-stone and

brick works, a condensed-milk factory, and a creamery. Lake Geneva, incorporated in 1883, is governed by a mayor, elected annually, and a council of which the executive is a member. The water works are owned by the city. Pop., 1900, 2585; 1910, 3079.

LAKE GEORGE. A village and the county seat of Warren Co., N. Y., 62 miles north of Albany, on the Delaware and Hudson Railroad (Map: New York, G 4). It has a picturesque location at the south end of Lake George, popular as a summer resort, and contains a public library and a fine park. Forts George and William Henry were located here. Pop., 1900, 1465; 1910, 632. The village was formerly called Caldwell, this name being changed to Lake George in 1904. See GEORGE, LAKE.

LAKE HERRING, MOONEYE, or WHITING. Names applied to the cisco and other whitefish (q.v.) See PLATE OF WHITEFISH, SMELTS, ETC.

LAKE HURON. See GREAT LAKES; HURON, LAKE.

LAKE INDIANS, or SENJEXTEE. A name sometimes applied to the Colville Indians (q.v.).

LAKE IROQUOIS, ir'ò-kwoi'. The name given to the glacial waters that occupied the site of Lake Ontario during late Pleistocene time. When the Labrador ice sheet was retreating from the area now comprised in the basin of the Great Lakes, it formed a dam across the St. Lawrence outlet and forced the waters to seek a more southerly channel. The discharge of the eastern part of the basin then was over the low divide at Rome, N. Y., into the Mohawk and thus into the Hudson River. Lake Iroquois extended considerably south of the present shore line of Lake Ontario, and its various stages of level are marked by a succession of terraced beaches which reach across central and western New York. The melting of the ice opened the lower outlet through the St. Lawrence, the waters subsiding into the basin they now occupy.

LAKE LAHONTAN, là-hònt'an. An extinct lake which with Lake Bonneville (q.v.) occupied in the Glacial period a part of the Great Basin region. Lake Lahontan was situated in western Nevada, and its depressions are now filled by small salt lakes. The shore lines indicate an extreme irregularity of outline, which conformed to the mountainous topography of the region. Consult Russell, "Geological History of Lake Lahontan, a Quaternary Lake of Northwestern Nevada," in *United States Geological Survey, Monograph No. 11* (Washington, 1885).

LAKE LAWYER. A fish, the burbot (q.v.).

LAKE LEOPOLD. See RIKWA.

LAKE LEOPOLD II. See LEOPOLD II, LAKE

LAKE LOAM. See LOESS.

LAKE MARACAIBO. See MARACAIBO, LAKE.

LAKE MEGANTIC. A town and the capital of Compton Co., Quebec, Canada, on the Chaudière River and on the Canadian Pacific Railway, 69 miles east-northeast of Sherbrooke by rail (Map: Quebec, H 5). The industrial establishments include saw mills, sash and door factories, furniture factory, broom factory, and pulp mill. It is a popular summer and health resort. Pop., 1901, 1883; 1911, 2399.

LAKE MENZALEH. See MENZALEH, LAKE.

LAKE MICHIGAN. See GREAT LAKES; MICHIGAN, LAKE.

LAKE MINNEWAUKON. See MINNEWAUKON, LAKE.

LAKE MÉRIS. See MÉRIS, LAKE.

LAKE MOERO, or **MWERO**. See **MOERO**, LAKE.

LAKE MOHONK (mô-hôpk') **CONFERENCE**. A series of annual conferences held at Mohonk Lake, N. Y. The movement was originated by Albert K. Smiley in 1883. Mr. Smiley, who was at that time a member of the Board of Indian Affairs, invited a number of those interested in the affairs of Indians to a meeting at Mohonk Lake to confer in regard to measures affecting the interest of the Indian tribes. These conferences were continued annually, meeting in October. In 1904 the scope of the conference was enlarged to include peoples of the Philippines, Porto Rico, and other dependencies of the United States. In 1895 was held the first of an annual series of conferences on international arbitration, known as the Lake Mohonk Conference on International Arbitration. The purpose of this conference was specifically to create and direct public sentiment in favor of international arbitration and an international court and generally to encourage the substitution for war of pacific methods in settling disputes between nations. This conference has become one of the most useful agents in the promotion of peace. It is attended annually by persons of national and international reputation, who deliver addresses on subjects relating to peace. At the Nineteenth Annual Conference on Arbitration held in 1913, it was recommended that the Secretary of State of the United States urge the nations which participated in the Second Hague Conference to form immediately the international preparatory committee recommended by it to prepare and submit to the nations a programme for the Third Hague Conference. Mr. Albert K. Smiley, who originated the conferences and defrayed the expenses of the meetings, died in 1912. The work was then taken up by his brother, Daniel Smiley. The Conference on International Arbitration maintains a permanent office. The secretary in 1914 was H. C. Phillips, Mohonk Lake, N. Y.

LAKE MONO. See **MONO**, LAKE.

LAKE NGAMI. See **NGAMI**, LAKE.

LAKE NICARAGUA. See **NICARAGUA**, LAKE.

LAKE OF BRIENZ. See **BRIENZ**, LAKE OF.

LAKE OF THE WOODS. A body of water famous in the history of the international boundary between the United States and the Hudson's Bay Company's territories. It is so named from the fact of its being studded with wooded islands and surrounded by hill forests. It lies in the west of Ontario, Canada, and on the north border of Minnesota, United States, 190 miles west-northwest of Lake Superior (Map: Ontario, F 8). According to the treaty which closed the War of Independence, it was divided between Great Britain and the United States by a central line running north-northwest from the mouth of the Rainy River. At its south end it receives the Rainy River from the Rainy Lake, and at its north extremity it sends forth the Winnipeg on its course to Hudson Bay. It is 65 miles long, from 10 to 50 miles wide, and measures about 300 miles round. Mining for free-milling gold is extensively carried on in its neighborhood, while the lumber industry is of great importance and centres about Kenora. Summer excursion steamers ply on its waters, and there is a steam-ferry service between the towns of Rat Portage, Norman, and Keewatin on its shores.

LAKE OF THUN. See **THUN**, LAKE OF.

LAKE OF ZURICH. See **ZURICH**, LAKE OF.

LAKE ONEGA. See **ONEGA**, LAKE.

LAKE ONTARIO. See **GREAT LAKES**; **ONTARIO**, LAKE.

LAKE PONTCHARTRAIN. See **PONTCHARTRAIN**, LAKE.

LAKE REGILLUS. See **REGILLUS**, LAKE.

LAKE RUDOLF. See **RUDOLF**, LAKE.

LAKES (Fr. *laque*, from Pers. *lāk*, *lak*, lac, from Skt. *lāksā*, lac insect, from *laksā*, hundred thousand, so called in reference to the numbers of the insects). Insoluble colored compounds of metallic salts with organic dyestuffs. In dyeing, these metallic salts are called *mordants* (q.v.). Salts of metals which easily dissociate to metallic hydroxides in boiling water are valuable as mordants. The color lake which forms is a chemical combination between the acid or phenolic nature of the dyestuff and the metallic hydroxide. With the fibre, the compound becomes threefold fibre—metallic hydroxide—dyestuff. In the dyeing of wool and silk the lakes formed are generally from the salts of barium, iron, tin, chromium, aluminium, magnesium, copper, or zinc.

Another class of lakes is that formed in mordanting and dyeing cotton with basic colors. Cotton does not have the power of combining with metallic hydroxides to any degree, but will unite with tannic acid, etc. In this case lakes are formed from basic colors by the aid of tannic acid, soap or sulphonated oil, sodium phosphate or arsenate, resin soap, casein or albumin, and tartar emetic or antimony salts.

According to Pliny and other early writers, pigments were frequently collected from the waste dye liquors of brazilwood, kermes, etc., which were designated as *laccæ*. The color of lakes often depends both upon the nature of the hydroxide and that of the dyestuff employed. *Carmine lake*, which is prepared by precipitating the coloring matter of cochineal, as by adding sodium carbonate to a cochineal decoction containing alum or stannous chloride, is of a beautiful scarlet color. According to the place where it has been manufactured, carmine lake is named Chinese, Florentine, Hamburg, Roman, or Venetian. *Madder lake*, which is also of a bright-red color, is made by dissolving the extract of madder or garancine in ammonia and then precipitating with alum or stannous chloride. It is also known as liquid madder lake, maroon lake, or rubric lake. Brazilwood yields a coloring matter which, when treated similarly to the foregoing, produces a purplish-red lake. *Vienna lake* is a species of brazilwood lake. Logwood yields a lake which is of a violet color. Addition of gypsum or kaolin to the brazilwood lake yields the so-called rose-pink lake. Persian berries and quercitron yield yellow lakes, that from quercitron being sometimes called *Dutch pink*. Madder lake has been largely superseded by the alizarine-red lake, which may be prepared by dissolving commercial alizarine in an aqueous solution of caustic soda, adding in succession sodium phosphate and Turkey-red oil. The solution is then treated with aluminium sulphate and calcium chloride. Variations in color may be produced by adding the purpurines. The eosin dyes give brilliant scarlet and crimson lakes. The usual precipitants are lead salts. The various lakes yielded by the coal-tar colors find extensive application in the arts, for paper staining, in printing, in lithography, in general

decorative painting, in calico printing and silk dyeing, and in preparing colored varnishes for ornamental metal surfaces, wood, leather, glass, etc. For detailed information, see the authorities referred to under **DYEING**; **COAL-TAR COLORS**; **TEXTILE PRINTING**. Consult also Jennison, *The Manufacture of Lake Pigments from Artificial Colors* (London, 1900), and Thorpe, *Dictionary of Applied Chemistry* (ib., 1912).

LAKES, LAW OF. The courts of England have rarely been called upon to expound the rules of the common law upon this topic, and systematic writers upon law in that country have not essayed the task of stating them. In 1878, however, the House of Lords was forced to consider the subject in two cases which went to that tribunal from Ireland and Scotland respectively. The Irish case involved the right of fishery in Lough Neagh, an inland lake covering nearly 100,000 acres. It was held that the crown has not, of common right, title to the soil underneath such a lake nor to the rights of fishery therein. It appears to have been assumed by all the law lords who delivered opinions in the case that when a lake is wholly surrounded by the land of a single owner the entire lake is included in his estate. They left undecided, however, the question whether, in the case of several riparian owners upon such a lake, each was entitled to the soil *usquam ad filum aquæ*. The Scottish case brought out the fact that the law of Scotland gave just that right to the several riparian owners upon Scottish lakes, and this right was recognized by the House of Lords, although it was decided (also in accordance with Scots law) that the rights of boating, fishing, and fowling were held by the various riparian owners in common.

In the United States the legal principles applicable to inland lakes have received frequent and exhaustive consideration from the courts. With respect to the Great Lakes, such as Ontario, Erie, and Michigan, the decisions of the courts have been uniformly based upon the theory that they are public waters. The land beneath them is owned by the State in trust for the public purposes of navigation and fishing, a trust which it cannot abdicate in favor of individuals or corporations.

The rules laid down by the State courts relative to other lakes are far from uniform. They are fairly divisible into three classes. In a few States, having only small lakes, which are not within the common-law definition of navigable waters, the courts have declared that these bodies of water are subject to the rules governing non-navigable streams. The soil is private property, as are the rights of fishing, fowling, and boating upon the waters. In Massachusetts and Maine the law upon this subject has been determined largely by early Colonial ordinances, which retained the ownership of lakes and ponds containing more than 10 acres in the State. Accordingly the common-law rules governing public waters apply to them. The soil beneath them, the use of the water, and the rights of fishing, fowling, and boating thereon are subject to State ownership and control. The third class of rules were first enunciated by the courts of New York, but have been adopted with some modifications by most of the States. According to these rules, lakes wholly within the territory of a single State are divided into two classes—those which are not navigable in fact and those which are. The first class are subject to private

ownership, and, in case of several riparian owners, each owns to the middle of the lake; i.e., the boundary lines of his adjoining tract extend from the shore or meander line on lines converging to a point in the centre of the lake. Lakes of the second class follow the same rule so far as the lake bed is concerned, but the State is entitled to control all rights of navigation, fishing, and fowling thereon. This power of control is in the nature of a trust for all its citizens. In some States the soil, as well as the control of the surface, of lakes navigable in fact, belongs to the State. Such, too, is the rule applied in New York and Vermont to Lake Champlain. Consult Gould, *Treatise on the Law of Waters, Including Riparian Rights* (Chicago, 1900).

LAKE SAINT CLAIR. See **SAINT CLAIR, LAKE**; **GREAT LAKES**

LAKE SAINT JOHN. See **SAINT JOHN, LAKE**.

LAKE SALMON. The namaycush, or lake trout.

LAKE SCHOOL. The name which the *Edinburgh Review* gave to a group of poets—Wordsworth, Coleridge, and Southey—who, at the beginning of the nineteenth century, lived by the English lakes in Cumberland and Westmoreland.

LAKE SHEEPSHEAD. The river drumfish. See **DRUM**.

LAKE SIMCOE. See **SIMCOE, LAKE**.

LAKE STATE. Michigan. See **STATES, POPULAR NAMES OF**

LAKE STURGEON. The common sturgeon of the lakes and large rivers of the Middle Western States. See **STURGEON**.

LAKE SUPERIOR. See **GREAT LAKES**; **SUPERIOR, LAKE**

LAKE TAHOE. See **TAHOE, LAKE**.

LAKE TITICACA. See **TITICACA, LAKE**.

LAKE TORRENS. See **TORRENS, LAKE**.

LAKE TROUT. See **NAMAYCUSH**; **TROUT**.

LAKE URUMIAH. See **URUMIAH, LAKE**.

LAKE VAN. See **VAN, LAKE**

LAKE VETTER. See **VETTER, LAKE**

LAKEWOOD. A famous health and pleasure resort in Ocean Co., N. J., 59 miles by rail south by west of New York, on the Central Railroad of New Jersey (Map: New Jersey, D 3). It is surrounded by an extensive forest of pines, in which are several fine lakes, is wholly free from malaria, and its bracing air and comparatively mild climate attract thousands of persons during the spring and winter. There are several fine hotels, beautiful country estates, and many cottages owned by annual visitors. Situated here are the Gould and Rockefeller estates, which are visited by thousands of tourists annually. In the vicinity is the Laurelton Farm, one of the largest poultry farms in the world. Pop. (township), 1900, 3094; 1910, 5149.

LAKEWOOD. A city in Cuyahoga Co., Ohio, on Lake Erie, 4 miles from the centre of Cleveland (Map: Ohio, G 2), of which it is a residential suburb. It contains a Carnegie library and the Lakewood Hospital, and has a large carbon factory. A high-level bridge, costing \$3,000,000, crosses the Cuyahoga River at this point. Pop., 1900, 3355; 1910, 15,181; 1914 (U. S. est.), 20,219.

LAKH. See **LAC**.

LAKMÉ. An opera by Delibes (q.v.), first produced in Paris, April 14, 1883; in the United States, March 1, 1886 (New York).

LAKMIUT, lûk'mût. See **KALAPUYA**.

LAKSHMI, lûksh'mé (Skt. *Lakṣmī*, wealth,

beauty, from *lakṣa*, sign, token, fortune). The Hindu goddess of wealth, prosperity, and beauty, and wife of Vishnu (q.v.), whose consort she is in his various reincarnations. She is said to have sprung, Aphrodite-like, from the foam of the sea when the gods and demons churned the ocean. According to other accounts she sprang from a lotus, which flower she is always represented as holding; hence she is sometimes called Padma, the goddess of the lotus (Skt. *padma*, lotus). More often she is termed *Sri*, as an embodiment of fortune and loveliness. Consult Dowson, *Hindu Mythology* (London, 1879), and Wilkins, *Hindu Mythology* (ib., 1900). For illustration, see Plate of HINDU DEITIES in the article INDIA.

LALAGE, lâl'a-jê (Gk. *λαλαγή*, prattling). A term of endearment commonly used of a lady-love. It is given by Horace to two different persons.

LA LAGUNA. See LAGUNA.

LALANDE, là'lând', JOSEPH JÉRÔME LE-FRANÇOIS DE (1732-1807). A French astronomer, born at Bourg-en-Bresse. He was intended for the law, but devoted himself with such success to mathematics and astronomy that the French Academy sent him to Berlin in 1751, to determine the moon's parallax, at the same time that Lacaille was sent to the Cape of Good Hope. In 1752 he returned, was subsequently appointed one of the astronomers of the Observatory of Paris, and in 1761 succeeded Delisle in the professorship of astronomy in the Collège de France. In 1795 he became director of the Paris Observatory. The Prix Lalande, established by him in 1802, is an annual prize of 540 francs, awarded to the person who, in France or elsewhere, makes the most interesting research or contributes the most useful memoir or work in the field of astronomy. His lectures had a rare attractiveness, and he published several astronomical works of a popular kind as well as works of profound scientific value. His principal work is his *Traité d'astronomie* (Paris, 2 vols., 1764; 3d ed., 3 vols., 1792). His *Histoire céleste française*, containing his great catalogue of 47,000 stars, which were afterward reduced by Francis Baily, appeared in 1802. He also wrote: *Voyage d'Italie* (Paris, 1769; 2d ed., 9 vols., with atlas, 1786), giving an account of his travels in Italy during 1765 and 1766; *Bibliographie astronomique* (ib., 1803); and a number of minor works on astronomy, navigation, etc.

LA LANDELLE, là län'dél', GUILLAUME JOSEPH GABRIEL DE (1812-86). A French author, born at Montpellier. He served in the navy for 12 years and was stationed in South America for most of this time. The scenes of many of his romances are laid in that country, and several of them have been translated into Spanish. Among these are: *La couronne navale* (1848); *Une haine à bord* (1851); *Les princes d'ébène* (1852); *Le dernier des filibustiers* (1857); *Sans Peur le corsaire* (1859). He also wrote: *Le langage des marins, recherches historiques et critiques sur le vocabulaire maritime* (1859); *Les géants de la mer* (1871); *Légendes de la mer* (1880).

LALANDES (là'ländz') FOX DOG. A fenec-like animal (*Octocyon megalotis*) of South and East Africa, having remarkably large ears and a very bushy tail. It is a native of open country and is very shy and not well known. It is usually nocturnal and found singly or in pairs. Its food consists of mice, birds, and fruit, while in some places termites seem to form the bulk

of its diet. It is especially interesting as one of the most aberrant of the Canidae and because of its unusual dentition. In the lower jaw it invariably has four molar teeth, or one more than any other member of the family, and in the upper jaw either three or four molars, whereas all other living canines possess only two. Anatomists look upon this as an indication of a marsupial ancestry. It is known to South African hunters as the long-eared Cape fox. See Plate of FOXES AND JACKALS.

LALANNE, là'lân', LÉON LOUIS CHRÉTIEN (1811-92). A French engineer, born in Paris. He was educated there at the Polytechnic School, and his first professional engagement was in the construction of the railway from Paris to Sceaux (1846). Two years afterward, during the revolution, he was appointed guardian of the national studios, but, on account of the revolution, found it safer to live out of France (1849-62), during which time he was charged with important public works in Wallachia, western Switzerland, northern Spain, and elsewhere. After his return to his native land he was made an inspector general (1867) and was director of the School of Bridges and Roads from 1877 until he retired in 1881. His works include: *Mémoire sur l'arithmo-planimètre* (1840); *Tables nouvelles pour abréger divers calculs relatifs aux projets des routes* (1840); *Description et usage de l'abaque ou compteur universel* (1845); *Instruction sur les règles à calcul* (1851); *Assainissement des halles centrales* (1875); *Rectification historique sur les ateliers nationaux* (1887).

LALEMANT, lâl'män', GABRIEL (1610-49). A French Jesuit missionary, born in Paris, where his family were hereditary practitioners of the law. He was a nephew of Jérôme Lalemant (q.v.). He became a member of the Society of Jesus in 1630 and in 1646 went to Canada, where he was sent to the Huron mission. During a great invasion of the Iroquois he was captured and, after being fearfully tortured, was put to death. Consult Francis Parkman, "The Jesuits in North America," in *France and England in North America*, part ii (Boston, 1902).

LALEMANT, JÉRÔME (1593-1673). A French Jesuit missionary to New France. He joined the Society of Jesus in 1609 or 1610 and served in various educational positions at Clermont, Blois, and other places. In 1638 he was sent to New France as superior of the missions to the Hurons, which position he held until 1645. From 1645 to 1650 he was superior of all the missions in New France, with headquarters at Quebec. He returned to France in 1650 to secure aid in the work and remained until 1659, when he went back to New France. For six years he was again superior of missions. Many of his reports, letters, and appeals are to be found in various volumes of the *Jesuit Relations* (Cleveland, 1896-1901).

LA LIBERTAD, là lë'bër-täd'. A seaport of the Republic of Salvador, situated on the Pacific Ocean, 20 miles south of Nueva San Salvador (Map: Central America, C 4). Its harbor is protected by a breakwater and is commercially the most important in the country. It exports coffee, sugar, rice, and indigo. Pop., 2708.

LALIN, là-lën'. A town of northwest Spain, in the Province of Pontevedra, situated among the mountains, 26 miles northeast of Pontevedra (Map: Spain, A 1). It contains the ruins of the monastery of Carboiro, a beautiful Roman

temple, and has manufactures of leather and paper. Pop., 1900, 17,882; 1910, 16,311.

LA LÍNEA, lá'le-ná-á. A town of Spain in the Province of Cadiz, situated just within the Spanish line at Gibraltar, whence the name. The town is chiefly of modern construction and has few interesting features, though there are a theatre, a bull ring, and several casinos. It is inhabited chiefly by laborers, and its gardens supply Gibraltar with vegetables. It has a Spanish garrison, but is not fortified, its forts having been razed by the English in 1810 to prevent their being used by the French invading army. Pop., 1900, 27,743; 1910, 33,296.

LALIQUE, lá'lek', RENÉ (1860-). A French jeweler and decorative artist, born at Ay, Marne, and educated at the Collège de Fontenay. In 1885 he established a workshop, where he originated and executed artistic designs in precious stones and metals. His work came to be in great demand. In 1905 he decorated the French room at the exposition of Liège, Belgium. He became an Officer of the Legion of Honor.

LALITA-VISTARA, lá-le'tá-vís-tá-rá (Skt., delightful expanse). The name of one of the most celebrated works of Buddhistic literature. It contains a narrative, written in Sanskrit, of the life and doctrine of the Buddha and is considered by the Buddhists as one of their nine chief works, treating of dharma, or religious law. It is one of the developed sutras of the Mahayana system of northern Buddhism, and it is based on older accounts of the Buddha's life. Its older portions are in verse, the prose parts are regarded as later in origin. There is a complete French translation by Foucaux, *Lalita-Vistara, ou développement des jeux* (Paris, 1884-92), an incomplete English rendering by Rajendralala Mitra, *Lalita-Vistara, or Memoirs of the Early Life of Sakya Sinha* (London, 1886); a partial German version by Lefmann, *Lalita-Vistara* (Berlin, 1874); and an edition of the Sanskrit text, with indexes, by Lefman, *Lalita-Vistara, Leben und Lehre des Sakya Buddha* (Halle, 1902-08).

LALLA ROOKH, lá'lá' rōōk' An Oriental romance by Thomas Moore (1817). It consists of four metrical tales told to Lalla Rookh, a young Indian princess, on a journey, by her betrothed disguised as a minstrel.

L'ALLEGRO, lá-lá'grō A lyric poem in the short-rhyme couplet by John Milton. It was written between 1632 and 1638.

LALLEMAND, lál'mán', CHARLES FRANÇOIS ANTOINE, BARON (1774-1839). A French general, born in Metz. He volunteered in 1792 and gave such proofs of valor that after the battle of Jena he was made colonel and in 1811 became general of a brigade, taking part in the defense of Hamburg. While in command of the Department of the Aisne in 1815, he made an effort to assist Napoleon, after the latter's return from Elba; and he was made general of a division. After the battle of Waterloo, where he fought with distinction, he wished to accompany his former Emperor to St. Helena, but his request was denied by the English, and he was imprisoned in Malta. Condemned by the Bourbons, he could not return to France, when released, and came to the United States (1816). Here he met his brother, and the two determined to found a colony of refugees in Texas, but were unsuccessful because of Spanish opposition. Lallemand still hoped to free Napoleon, with

whom he was in constant communication, and the latter, on his death (1821), bequeathed to him 100,000 francs. As he had been condemned to death, the French government was averse to his receiving the money. After opposing the course of the Liberals once more, in the Spanish War (1823), he spent some time in New York City as head of a school, but at the end of the revolution of 1830 returned to France, where he was restored to his military and political honors, serving in the Chamber of Peers (1832) and, for a while, as military commander in Corsica.

LALLEMANT. See AVÉ-LALLEMANT.

LALLY, lá'lá', THOMAS ARTHUR, BARON DE TOLLENDAL, COUNT DE (1702-66). A French general and Governor in the Indies, born at Romans in Dauphiné. His father, Sir Gerard Lally, was an Irish Jacobite refugee and commander of an Irish regiment. In his youth Lally distinguished himself as a soldier in Flanders. Later he took part in the battle of Fontenoy and was made a brigadier general on the field. In the same year (1745) he accompanied Prince Charles Edward to Scotland and in 1756 was made a lieutenant and appointed commander in chief in the East Indian settlements. He commenced hostilities against the British in India in 1758, took many places, and besieged Madras itself, but sustained a severe defeat near Vindarachi and was compelled to retreat to Pondicherry, which was attacked in 1760 by a greatly superior British force. Lally held out for 10 months, but Pondicherry fell on Jan. 16, 1761. He was brought to England as a prisoner of war, but upon hearing that he was under accusation in France, he secured his liberty and went to Paris to defend himself. The Parlement of Paris, however, on May 6, 1766, condemned him to death for betraying the interests of the King and the East India Company, and he was beheaded three days after. His son procured a royal decree in 1778, declaring the condemnation unjust and restoring all the forfeited honors. Consult: G. B. Malleson, *The Career of Count Lally* (London, 1865); the *Biographie Michaud*, article "Lally"; Voltaire, *Œuvres complètes*, vol. ii (Paris, 1885).

His son, TROPHIME GÉRARD, Marquis de Lally-Tollendal, was born in Paris, March 5, 1751. He was a member of the States-General and National Assembly in 1789 and acted with the Third Estate. He was in Switzerland during 1790 and 1791 and, returning in the following year, became alarmed at the democratic tendencies of the National Assembly and allied himself with the court. He sought to protect the King, but was himself obliged to flee to England. After the establishment of the Consulate he returned to France and lived at Bordeaux. Louis XVIII made him a peer in 1815, but he remained true to his political principles and defended constitutional liberty. He died March 11, 1830. He was the author of some *Mémoires*, designed to aid in the rehabilitation of his father; also of the *Défense des émigrés* (1794), which made a great sensation in France at the time of its appearance. Consult Gauthier de Brézy, *M. le Marquis Lally-Tollendal* (Paris, n. d.), and Henri Carré, "La Révision du Procès Lally, 1778-1786," in *Revue Historique*, vol. lxxxiii (Paris, 1903).

LALO, lá'lá', EDOUARD VICTOR ANTOINE (1823-92). A French composer, born in Lille. He was a pupil of Baumann at the Lille Con-

servatory, after which he went to Paris and played the viola at chamber concerts in the string quartets of Arningaud and Jacquard. About this time he wrote the opera *Fiesque*, which was not performed. He then turned to instrumental composition and wrote the *Symphonie espagnole*, a *Concerto de violon* for Sarasate, and a *Concerto russe*. He also wrote a ballet, *Namouna*, whose music became popular, and composed *Le roi d'Ys* (1888), a comic opera in four acts. Its beauties were at once recognized, and it has ever since been regarded as his masterpiece. An unfinished opera, *La Jacquerie*, was completed by Coquard and played at Monte Carlo in 1895. Lalo ranks high among modern French composers. His orchestration is dainty and scholarly, while all his music is marked by warmth and color. Other works include: *L'Allegro symphonique*; *Concerto for the Cello*; *Rhapsodie norvégienne*; *Concerto for the Piano*. He died in Paris. Consult Hugues Imbert, *Nouveaux profils d'artistes* (Paris, 1892).

LA LUZ, lá lōōth. The harbor of Las Palmas (q.v.), Canary Islands.

LAMA. A genus, formerly known as *Auchenma*, of the Camelidae (q.v.), composed of the guanaco, llama, alpaca, and vicuña (qq.v.). It has been specially studied by O. Thomas (*Proceedings of the Zoological Society of London* for 1891), who concludes that the llama and alpaca are forms of the guanaco (*Lama huanacos*) and that the vicuña (*Lama vicugna*) is distinct. See Plate of CAMELS.

LAMACHUS, lám'a-kūs (Lat., from Gk. *Λαμάχος*, *Lamachos*) (c.465-414 B.C.). An Athenian commander. He took part in the earlier campaigns of the Peloponnesian War, in 433 B.C. drove Timesilaus from Sinope, was in command of a fleet in the Euxine (424), and signed the Peace of Nicias (421). But he is better known for his bravery in the Sicilian expedition, where he was in command with Alcibiades and Nicias. He was killed in the summer of 414, in a skirmish with the Syracusans. He was ridiculed by Aristophanes as a member of the war party.

LAMAISM, lá'má-iz'm (from Tib. *blama*, superior, lama). The name given to that form of Buddhism which prevails in Tibet and Mongolia. It is Buddhism (q.v.) corrupted by Sivaism (see SIVA) and by a mixture of Shamanism (q.v.) and sorcery, which goes back, in part at least, to Bon, or the primitive Tibetan religion. The religion was not known in Tibet until the seventh century A.D., when King Sroñ Tsan Gampo (638-641 A.D.) married two princesses, one from India and one from western China, both of whom were devoted Buddhists. Through their influence this monarch became converted to the faith of the Enlightened One. But Sroñ Tsan appears to have been a Buddhist more in name than in fact, it was left to a later king, Thi-Sroñ Detsan, to become the true promoter and ardent upholder of the faith. This ruler invited a Buddhist monk named Padma-Sambhava, or Lotus-Born, to come from northern India to Tibet, which he did in the year 747 A.D., and became the real founder, organizer, and patron saint of Lamaism as the religion of Tibet. He at once gave battle to the sorcerers and exorcisers, fighting them with their own weapons, and, aided by the King, he established the order of "red" Lama priests. The emphasis which his pupils laid on magic has brought his name some disrepute among the more intelligent dignitaries of the Lamaist church,

who belong to the "yellow" order of monks. The character of this new Tibetan faith, as Waddell points out, was largely "a priestly mixture of Sivaite mysticism, magic, and Indo-Tibetan demonolatry, overlaid by a thin varnish of Mahayana [northern] Buddhism. And to the present day Lamaism still retains this character." From the date of its founding the religion continued to develop and spread until about 900 A.D., when it received a check and underwent a brief period of persecution or reaction; but it soon recovered, growing stronger than ever as the Kings grew weaker. A great religious organizer, *Atiśa* (Tib. ཀུན་གྲུབ་ཀྱི་ཆེན་པོ་, who came from India (1042), reformed the priesthood into a unitary body.

The Mongol dynasty founded by Genghis Khan was favorable to the Lamas, Kublai Khan being converted to Lamaism by Rags-pa, abbot of the Sa-skya monastery. These abbots came to be recognized as regents of Tibet (1270-1340), but under the later Mongol emperors and the Ming dynasty which followed them (1368), their power decreased, owing to the creation of new abbots by the emperors; it was the great saint and monastic reformer bTsoñ-K'a-pa who lent his influence to the grand Lamas, thus enabling them to become both temporal and spiritual rulers. By playing off the Mongols, who, after a relapse, had been converted against Lamaism, against their Tibetan opponents, and the Chinese against the Mongols, the crafty Lamas managed to maintain their independence until the Manchu Emperor Kang-hi (reigned 1662-1722 A.D.) put an end to their political independence of China and established a Chinese administration. It is interesting to note in this connection that the Emperor of China was given by the Lamaists a religious status, inasmuch as he is considered an incarnation of Manjusri, while the Russian Czar is supposed to be an incarnation of the soul of the goddess Tara. It was Nag-wan Lözang, the fifth Grand Lama, who in 1640 A.D., by a stroke of statecraft, got himself confirmed as the Dalai Lama, or "Lama vast as the ocean," and the modern period of Lamaism may be said to have begun with him. To-day Lamaism extends beyond the borders of Tibet to the Kalmuk Tatars on the banks of the Volga, through Siberia, Manchuria, Mongolia, and scattering in China, so that it is estimated that its followers number no fewer than 10,000,000.

With regard to doctrine and religious belief the Buddhist theory of the universe, with its Hindu heaven and hell and its general system of morality, was adopted, but the presence of abundant extraneous matter of foreign accretions has already been mentioned. As ancient Buddhism knows of no worship of God, but merely of an adoration of saints, the latter is also the main feature of Lamaism. (See MAHAYANA.) The essence of all that is sacred is comprised by this religion under the name of dKon mChhog gSsum (pronounced *kon-ch'og-sum*), which consists of the three most precious jewels—the Buddha jewel, the doctrine jewel, and the priesthood jewel—which represent a kind of trinity, with essential unity. The first person of this trinity is the Buddha, but he is not the creator or the origin of the universe; as in Buddhism, he is merely the founder of the doctrine, the highest saint, though endowed with all the qualities of supreme wisdom, power, virtue, and beauty, which raise him beyond the pale of ordinary existence. The second jewel, or the doctrine (dharma), is the law or religion—that which

is, as it were, the incarnation of the Buddha, his actual existence after he had disappeared in Nirvana. The third jewel, or the priesthood (*sangha*), is the congregation of the saints, comprising the whole clergy, the incarnate as well as the nonincarnate representatives of the various Buddhistic saints. The latter comprise the five Dhyani Buddhas (see *DHYANI BUDDHA*), or the Buddhas of Contemplation (*Amitābha*, of whom the Lama of Ta-shi-lunpo is an incarnation, being the most revered), and, besides, all those myriads of Bodhisattvas, Pratyeka Buddhas, or solitary saints who have attained perfection by themselves without the Supreme Buddha's help, and pious men, who became canonized after their death. It is obvious that among their number a portion only can enjoy practical worship; but the clergy, as the visible representative of these saints, claim and receive due homage at all the religious ceremonies. Of the Bodhisattvas, Padmapāni, an emanation of Amitābha, and Manjusri are the most popular. Inferior in rank to the saints are the gods and spirits, the former chiefly taken from the pantheon of the Sivaïtes. The highest position among these is occupied by the four spirit kings—Indra (*q v*), the god of the firmament, Yama, the god of death and the infernal regions; Yamantaka, or Siva, as revenger in his most formidable shape, and Vaisravana, or the god of wealth. The goddess Tārā has an earthly representative in the abbess of the 'S i' 'D' monastery, who is deeply revered. Besides these, there are a number of genii, tutelary demons, and spirits, which receive recognition or worship. The worship of these saints, gods, and spirits consists chiefly in the reciting of prayers and sacred texts and in the intonation of hymns, accompanied with a kind of music, which is a chaos of deafening sounds of horns, trumpets, and drums. During this worship, which takes place three times a day, the clergy, summoned by the tolling of a little bell, are seated in two or more rows, according to their rank; and on special holidays, the shrines, temples, and altars are decorated with symbolic figures, while offerings of tea, flour, milk, butter, and others of a similar nature are made by the worshippers, animal sacrifices or offerings entailing injury to life being forbidden, as in the Buddhistic faith. In the ritual which the priests conduct, rosaries, prayer wheels, and prayer flags form also a part, and symbols, holy relics, charms, and amulets are employed in acts of worship or superstitious rites, while charms, spells (as such may be considered the formula *Om, mani padme hum*, 'O, Lotus jewel, amen,' which the Lamas incessantly repeat), incantation, divination, astrology, and necromancy are also resorted to.

• The religious festivals and holidays of Lamaism are numerous. The three great festivals are New Year's, the Flower Feast, and the Water Feast, to which might be added a lantern festival and the chase of the scapegoat of bad luck. The Log-gSaar, or the festival of the new year, in February, marks the commencement of the season of spring, or the victory of light and warmth over darkness and cold. The Lamai-ti, like the Buddhists, celebrate it in commemoration of the victory obtained by Buddha over six heretic teachers. The second festival, probably the oldest festival of the Buddhistic church, is held in commemoration of the conception or incarnation of the Buddha and marks the commencement of summer. The third is the Water

Feast, in August and September, marking the commencement of autumn.

The two principal sacraments of Lamaism are baptism and confirmation. The former is administered on the third or tenth day after birth; the latter, generally when the child can walk and speak. The marriage ceremony is to the Tibetans not a religious, but a civil act, though it is from the Lamas that the bridegroom and bride learn the auspicious day; nor do they fail to complete the act with prayers and rites, which must be responded to with handsome presents. A similar observation applies to the funeral ceremonies of the Tibetans. The method of disposing of the dead is by burning, by interment, and likewise by exposing the body in the open air, to be devoured by birds and beasts of prey. When a man dies, a Lama must be present to superintend the proper separation of the body and the soul and to direct the spirit on its journey to the Western paradise; also to cast the horoscope and to enable the departed to be reborn in a happy existence or to enter the regions beyond rebirth, for Lamaism, like Buddhism, has the doctrine of metempsychosis and reincarnation. The most lucrative part of the Lama's business, however, is the masses which he has to perform until the soul is released from Yama, the infernal judge, and ready to enter upon its new existence.

One of the most interesting features of Lamaism is the organization of its hierarchy. Its summit is occupied by two Lama popes, the one called *Dalai Lama*, who resides at Potala, a hill near Lhasa; the other bearing the titles of *Tashi Lama* (Old, Krashi), *Teush Lama*, *Bogodo Lama*, etc., and officially called *Pan-ch'en rin po ch'e*, literally 'the right reverend great teacher jewel' (i.e., precious teacher)—he resides in the convent at bKra-Shiss-Lhun-po, or Ta-shi-lun-po, near gShiss-Ka-rTse and is an incarnation of Amitabha. In theory both popes have the same rank and authority in spiritual as well as in temporal matters, but as the Dalai Lama possesses a much larger territory than the other, he is in reality much more powerful. Next in rank are the *Khutuktus*. The third degree is that of the *Khubilghans* or *Hobilghans*—which Mongol name is more frequently given to them than the Tibetan title *byang chub*—a translation of the Sanskrit *bodhisattva*. Their number is very great. These three degrees represent the clergy, which claims to be the incarnation of the Buddhistic saints. The theory of the reincarnate succession of the Lamas is strongly marked. The Dalai Lama and the Pan-ch'en were in their former lives the two chief disciples of the great Lamaist reformer bTson-K'a-pa (born in 1378) who was an incarnation of the Bodhisattva Amitabha or, as some will have it, of Manjusri, and who is reputed to have founded, in the first half of the fifteenth century of the Christian era, the present system of the Lama hierarchy. He was the founder of the "yellow" order of monks, who do not marry and who carry an alms bowl, like their Hindu colleagues. The Khutuktus were, in their prior existences, other Buddhistic saints of very great renown; and the Khubilghans are those reborn hosts of saintly patrons whom the temples and convents of Lamaism possess in boundless numbers. On the death of a Grand Lama his soul is supposed to take up its abode in some infant born shortly after the pontiff's decease. Up to the end of the eighteenth century the clergy of these various classes determined

the choice of the children into whose bodies the souls of their departed members had migrated. At present, however, it seems that the Emperor of China exercises a paramount influence on the discovery of those transmigrations. In order to ascertain the rebirth of a departed Lama, various means are relied upon. Sometimes the deceased had, before his death, confidentially mentioned to his friends where and in which family he would reappear, or his will contained intimations to this effect. In most instances, however, the sacred books and the official astrologers are consulted on the subject; and if the Dalai Lama dies, it is the duty of the Pan-ch'en to interpret the traditions and oracles; whereas, if the latter dies, the Dalai Lama renders him the same service. The proclamation of so great an event, however, as the metempsychosis of a Dalai Lama or a Pan-ch'en is preceded by a close examination of the child who claims to be in possession of the soul of either of these personages. The child thus selected is subjected to a strict course of educational discipline destined to enable him to perform his important duties.

Besides the three classes of the higher clergy alluded to above, Lamaism possesses a lower clergy, which, having no claim to incarnate holiness, recruits its ranks on the principle of merit and theological proficiency. It has four orders: the pupil or novice, who enters the order generally in his seventh or ninth year; the assistant priest; the religious mendicant; and the teacher or abbot. To these may be added two academical or theological degrees and also two dignities, conferred by the sovereign Lamas on those doctors who have distinguished themselves by extraordinary sanctity or learning. All the members of these orders must make the vow of celibacy, and by far the greatest number of them live in convents. A Lamaist convent or monastery, *dGonpa*, consists of a temple, which forms its centre, and of a number of buildings connected with the temple and used as the meeting rooms, the library, refectory, dwellings, and other spiritual and worldly wants of the monks. At the head of the convent is a *Klu'i* or an abbot, the latter being elected by the chapter and appointed by the Dalai Lama or the provincial Khubilghan. In addition to these orders of monks and convents, Lamaism has likewise its nuns and nunneries.

The scriptures of Lamaism are divided into two great collections: (1) the canon or sacred books, called *bKang-gyur* or *Kang-gyur*, the translated commands or words of the Buddha, rendered from the Indian texts or, in a few instances, from the Chinese; (2) the commentary *bs-Tan-gyur* or *Tan-gyur*, which is encyclopædic in its character. The canon, or *Kang-gyur*, contains no fewer than 1083 works, which in some editions fill 100 or 108 volumes of about 1000 pages each. It comprises the following sections: (a.) *Dul-wa* (Skt. *Vinaya*), discipline; (b.) *Dō* (Skt. *Sūtra*), sermons of the Buddhas; (c.) *Ch'os-non-pa* (Skt. *Abhidharma*), philosophy, including *S'er-p'yi* (Skt. *Prajñā Paramitā*), or metaphysics. There are also minor subdivisions containing details as to doctrine, including Nirvana (*Mya-nan-las-'das-pa*), ethics, ritual, magic, and the like. The commentary literature, *Tan-gyur*, is very voluminous and comprehensive, some 225 volumes in folio, but it has not the canonical authority of the other collection. The "red" monks, too, have a literature which is con-

sidered heterodox; the works and legends of Padma-Sambhava belong to this category. Much religious lore and superstition are also embodied in the enormous popular literature of Tibet.

Bibliography. Grünwedel, *Mythologie des Buddhismus in Tibet und in der Mongolei* (Leipzig, 1900, finely illustrated); to this may be added Waddell, *The Buddhism of Tibet, or Lamaism* (London, 1895). Consult likewise: Köppen, *Die lamaische Hierarchie und Kirche* (Berlin, 1859); Schlagintweit, *Buddhismus in Tibet* (London, 1886); Csoma de Kőrös (q.v.), *Die lamaische Hierarchie* (Berlin, 1859); Feér, "Analyse du Kandjur," in *Annales du Musée Guimet* (Paris, 1881); Rockhill, *The Life of the Buddha and the Early History of his Order, from Tibetan Works* (London, 1884); Grünwedel, "Der Lamaismus," in *Die orientalischen Religionen*, pp. 130-159 (Berlin, 1906); Schulemann, *Die Geschichte der Dalailamas* (Heidelberg, 1911); Walleser, *Die Mittlere Lehre des Nagarjuna* (trans. from the Tibetan, 1911; from the Chinese, 1912), Francke, *History of Western Tibet* (London, 1907) Further, Schlagintweit, "Leben-geschichte von Padma Sambhava," in *Abhandlungen der bayerischen Akademie der Wissenschaften, Philosophische Klasse*, vols. xxi-xxii (München, 1899-1903), Milloué, "Comments est fondé le pouvoir temporel des Dalai Lamas," in *Annales du Musée Guimet*, vol. xiv (Paris, 1903; trans. in *Indian Antiquary*, vol. xxxiii, Bombay, 1904); Sarat Chandra Das, "Hierarchy of Dalai Lama," in *Journal of Royal Asiatic Society*, n. s., vol. lxxiii, part i, pp. 80-93 (Calcutta, 1904), Rockhill, "The Dalai Lama . . . their Relation with the Manchu Emperors," in *T'oung Pao*, vol. xi, pp. 1-104 (Leyden, 1910); Speyer, "Het Lamaïsme van Tibet," in *Gids*, vol. lxxv, pp. 508-551 (Amsterdam, 1911); Enriquez, "Lamaism in Western Tibet," in *Buddhist Review*, vol. vi (London, 1914); Gunes, "Der Lamaismus," in *Archiv für Religionswissenschaft*, vol. xvii, pp. 113-124 (Leipzig, 1914). There are also important works in Russian by Pozdniecev, Ukhtomskii, Vasiliev, and other scholars. See also **BUDDHISM** and its bibliography.

LAMAMIAO, lá-má-mé-ou' (Mong. *Dolon-nor*), also called CHAO NAIMAN SUME. An important commercial town in the southeast of Mongolia, situated at an altitude of about 4000 feet, about 150 miles north of Peking. It is one of the centres of the Chinese-Mongolian trade and is especially noted for its statues of bronze, copper, and iron, gongs, vases, and other religious objects, which are exported in large quantities to Buddhist countries. Manufactures and agricultural products from China are exchanged here for animals. Russian goods come to the town from Kiachta, and the Tatars exchange herds of oxen, camels, and horses for tea, cloth, and tobacco. There are two extensive monasteries in the Mongolian part of the town. Pop. (est.), 30,000.

LA MANCHA. See MANCHA, LA.

LA MANCHE. See MANCHE, LA.

LAMANSKY, lá-mán'ski, VLADIMIR IVANOVITCH (1833-). A Russian philologist and historian, born and educated in St. Petersburg. He was professor of Slavic literature in the university of that city in 1865-90 and founded the ethnographical periodical *Zivaia Starina* in 1890. His publications include: *The Slavs in Asia Minor, Africa, and Spain* (1859); *Servia and the Slavs of Southern Austria* (1864);

Historical Study of the Græco-Slav World (1871); *The Songs of Southern Russia* (1875); *Studies of the Czech* (1878) and Bulgarian literatures; *Secrets d'Etat de Venise* (1884); *The Three Worlds of Europe and Asia* (1892). An intense "Slavophile," Lamansky in the historical view looks upon the Greek-Slavic civilization as the opposite of the Germano-Roman.

LAMAR, la-mär'. A city and the county seat of Prowers Co., Colo., 116 miles east of Pueblo, on the Atchison, Topeka, and Santa Fe Railroad (Map: Colorado, G 3). It is in the fertile Arkansas valley, producing alfalfa, hogs, sheep, and fruits. Among the industrial establishments are a large condensed-milk plant, flour and feed mills, lumber yards, and manufactories of beet sugar, sashes and doors, brooms, and bricks and tile. The city contains a Carnegie library and two hospitals and owns its water works. Pop., 1900, 987; 1910, 2977.

LAMAR. A city and the county seat of Barton Co., Mo., 39 miles north by east of Joplin, on the north fork of the Spring River, and on the Missouri Pacific and the Frisco Lines systems (Map: Missouri, B 4). It has a public-school library, a courthouse, and Lamar College. The city is in a region largely agricultural, with coal-mining interests. There is a trade in flour. The water works and electric-light plant are owned by the city. Pop., 1900, 2737; 1910, 2316

LAMAR, José (1778-1830). A South American general, born at Cuenca in what is now Ecuador. His early life was spent in Spain, where he fought against France; in 1815 he was sent to Peru in command of the Spanish army, from which he resigned after the surrender of Callao Castle (1821), to enter the Republican army. He commanded the Peruvian troops at Ayacucho (1824) and in 1827 was elected to the Presidency of Peru. In 1828 he provoked a war with Colombia and in 1829 was defeated by Sucre, the late President of Bolivia, who commanded the Colombian forces at Cuenca. He was deposed a few months afterward and died in exile.

LAMAR, JOSEPH RUCKER (1857-1916). An American jurist, born at Ruckersville, Ga. He attended the University of Georgia, graduated from Bethany (W. Va.) College in 1877, and studied law at Washington and Lee University. Admitted to the bar in 1878, he practiced law at Augusta, Ga., from 1880 to 1903, was a member of the Georgia House of Representatives in 1886-89, and served as commissioner to codify the laws of Georgia in 1895. He was appointed associate justice of the Supreme Court of Georgia in 1901 to fill an unexpired term and was regularly elected to that office in 1903; but two years later he resigned and resumed the practice of law at Augusta, where he met and became the friend of President Taft. In 1910 he was appointed associate justice of the Supreme Court of the United States, and in 1914 he served as one of the delegates of the United States to the Niagara Falls Peace Conference, which attempted to settle the dispute with Mexico concerning insults to the American flag by the government of General Huerta.

LAMAR, LUCIUS QUINTUS CININNATUS (1797-1834). An American jurist, born at Eatonton, Ga., of French-Huguenot descent. He was educated at Milledgeville, Ga., and studied law at Litchfield, Conn. Returning to his native State, he was admitted to the bar in

1819 and rapidly won distinction in his profession. In 1819 he revised *Georgia Justices*, and in 1821 he was commissioned by the State Legislature to make a compilation of *The Laws of Georgia from 1811 to 1819* (1821). In 1830 he was elected to succeed Thomas W. Cobb as a judge of the Georgia Supreme Court and remained upon the bench until his death.

LAMAR, LUCIUS QUINTUS CININNATUS (1825-93). An American lawyer and legislator, son of the preceding. He was born in Putnam Co., Ga., graduated at Emory College (Oxford, Ga.) in 1834, studied law at Macon in the office of A. H. Chappell, and was admitted to the bar in 1847. In 1849 he removed to Oxford, Miss., where, besides practicing law, he was adjunct professor of mathematics in the University of Mississippi from 1850 to 1852, when he removed to Covington, Ga. He was elected to the Georgia Legislature in 1853 and returned to Mississippi in 1855. In 1856 he was elected to Congress and in 1858 he was re-elected. In December, 1860, he resigned to take part in the Secessionist movement in his State. He was a member of the Charleston Convention of 1860, before which he made a stirring speech, and of the Mississippi Convention which, on Jan. 9, 1861, passed the ordinance of secession, which he himself had drafted and presented. In the summer of 1860 he had accepted an appointment to the chair of ethics and metaphysics in the University of Mississippi, but resigned his professorship to heed the call to arms. In May he was chosen lieutenant colonel of the first regiment raised in Mississippi for service "during the war." He led his regiment at Yorktown and Williamsburg, but resigned from active service in October, 1862, and early in the following year was sent to Europe as special commissioner of the Confederate States to the Russian Empire. He did not proceed to his post, however, and, his commission not being confirmed by the Confederate Senate, he returned to America early in 1864, after having spent some months in London and Paris. From December, 1864, until the close of the war, he served as judge advocate of the military court of the Third Army Corps, with the rank of colonel. He was professor of ethics and metaphysics at the University of Mississippi in 1866 and 1867 and of law from 1867 to 1870. In this year he resigned in consequence of Republicans having become trustees of the university upon the readmission of the State into the Union. He was a member of Congress from 1873 to 1877 and of the United States Senate from 1877 to 1885, was Secretary of the Interior in President Cleveland's cabinet from 1885 to 1888, and was an associate justice of the United States Supreme Court from 1888 until his death. His efforts were directed chiefly to bringing about a reconciliation and a better understanding between the North and the South, and a remarkable eulogy of Senator Sumner, delivered by him before the House in 1874, did more than perhaps any other one thing up to that time towards accomplishing this result. He opposed with great energy and eloquence all schemes involving the debasement or undue inflation of the currency and in 1878 showed his strength of conviction and independence of mind by refusing to resign or change his views on this question at the command of the Mississippi Legislature and by appealing to the people, who enthusiastically sustained him.

Among his many notable orations and addresses perhaps the ablest was that delivered at the unveiling of the Calhoun monument at Charleston, S. C., in 1887. Consult Mayes, *Lucius Q. C. Lamar: His Life, Times, and Speeches* (Nashville, Tenn., 1896).

LAMAR, MIRABEAU BUONAPARTE (1798-1859). An American politician, President of Texas, the brother of the elder L. Q. C. Lamar. He was born at Louisville, Ga., and engaged in agricultural and mercantile pursuits until 1828, when he founded a States'-rights newspaper, the *Columbus Independent*. In 1835 he went to Texas and became prominently identified with the revolutionary party. He served at the battle of San Jacinto, was commissioned major general, and was appointed to the command of the army in the summer of 1836, but insubordination in the ranks forced his retirement. He then became Attorney-General, Secretary of War, Vice President, and President of Texas. During his term of office as President (1838-41) the independence of Texas was recognized by the chief powers of Europe. He is credited with having originated the educational system of Texas. He recommended in his message to the Third Congress of the Republic the Act (passed in 1839) granting three leagues of land to each county for the support of an academy and 50 leagues for the "establishment and endowment" of two universities. From these provisions have developed the public-school system of the State and the University of Texas. He served with distinction in the Mexican War and against the Comanche Indians. In 1857 he was appointed United States Minister to the Argentine Republic, but did not serve; in 1858 Minister to Nicaragua and Costa Rica. He published *Verse Memorials*.

LA MARA. See LIPSUS, IDA MARIE.

LA MARCK', COUNT. A name of the Belgian soldier and author Arenberg (q.v.), or Arenberg.

LAMARCK, JEAN BAPTISTE PIERRE ANTOINE DE MONET DE (1744-1829). A French zoölogist, regarded as the greatest of the period between Linnaeus and Cuvier. He was born Aug. 1, 1744, at Bazentin-le-Petit, a village in Picardy, the eleventh child of parents belonging to the minor nobility. Destined by his parents for the Church, though preferring a military life, he entered the college of the Jesuits at Amiens. But, his father dying in 1760, he enlisted at the age of 16 in the French army during the Seven Years' War, distinguished himself, and was promoted to a lieutenancy. His military career was, however, checked by a serious accident, whereupon he went to Paris, studied medicine, and, meeting Rousseau, was led to study botany under Bernard de Jussieu. For 10 years he studied native and exotic plants. His *Flora française*, published in 1778 in three volumes and augmented to six volumes in the third edition of 1805-15, brought young Lamarck immediate fame and led to his election to the French Academy of Sciences in 1779. In 1781 Buffon obtained for him a commission as royal botanist, charged with visiting the foreign botanical gardens and museums as well as mines. His travels (1781-82) led him to visit Holland, Germany, and Hungary. On his return he was appointed keeper of the herbarium of the Royal Garden, to which he afterward gave the present name, *Jardin des Plantes*. His career as a botanist, in which he achieved such success that

he was called the French Linnaeus, covered a period of about 25 years. Meanwhile he took an active part in the reorganization of the Museum of Natural History, with the result that his ideas were carried out and extended by Lakanal, and the *Jardin des Plantes* was transformed into an institution of higher instruction, with a staff of 12 professors.

In the summer of 1793, the Museum of Natural History having been reorganized, the chair of zoölogy was divided, the professorship of vertebrate zoölogy being filled by Geoffroy Saint-Hilaire, while to Lamarck, now 49 years of age, was assigned the chair of invertebrate zoölogy. In 1801 appeared his *Système des animaux sans vertèbres*, in the introduction to which his views on the origin of species were first published. Lamarck introduced great reform in the classification of animals, founding the classes Infusoria, Annelida, Crustacea, Arachnida, and Tunicata, the order of Cirripedia, and the molluscan group of Heteropoda. He specialized in the Mollusca, breaking up the Linnæan genera into more modern generic groups, and all later work in this branch has been in the line of expansion and elaboration of his labors. The *Philosophie zoologique* was published in 1809 (trans. by Hugh Elliot, 1914) and in 1815-22 appeared his monumental work, in seven volumes, *Histoire naturelle des animaux sans vertèbres*, augmented to 11 volumes in the second edition of 1835-45.

Lamarck was greatly interested early in life in meteorology, and from 1799 to 1810 he published an annual " . . . " and was the first to foretell " . . . " of the weather. His speculations in physics and chemistry were, however, worthless, in fact, he lacked the qualities of an experimenter, in this respect differing from Darwin. A little book, published in 1802, entitled *Hydrogéologie*, preserves his reflections on geology, in antagonism to the "catastrophic" ideas of Cuvier; and Huxley characterized it as containing "sober and philosophic hypotheses," compared with those of Cuvier.

× Lamarck was the founder of invertebrate paleontology, as Cuvier was of vertebrate paleontology. He utterly opposed Cuvier's views of the sudden general extinction and creation of species, believing that the fossil forms were the ancestors of the animals now living; species to his mind being variable and undergoing a slow modification. He insisted on the following foundation principles of paleontology: (1) the great length of geological time, (2) the continuous existence of organic life through the geological periods, (3) the physical environment remaining of the same general nature throughout, but with (4) continued gradual, not catastrophic, changes in the relative distribution of land and sea—changes which (5) caused corresponding modifications in the habits, and (6) consequently in the habits, of living beings, so that there has been all through geological history a slow modification of life forms. Although Lamarck was a uniformitarian and thus anticipated Lyell, his idea of creation was evolutionary rather than simply uniformitarian. His evolutionary theories brought him into sharp controversy with Cuvier, whose influence led to their neglect by his contemporaries. It was only in the present century that their real worth has been appreciated. See LAMARCKISM. . . .

Lamarck was a man of exceedingly fine character, generous, free from jealousy and self-assertion. He was patriotic, imperturbable under the assaults of fortune, and patient under affliction. His mind was essentially philosophic, broad, and synthetic, he was a bold thinker and in every respect an epoch-making man. Besides the larger works mentioned above, he was the author of many articles, some of which have been translated into English and have become the bases of standard works on the subjects treated. He died Dec. 18, 1829, at the age of 85 years.

Bibliography. Cuvier, *Eloge* (Paris, 1832), translated in *Edinburgh New Philosophical Journal*, No. 39 (Edinburgh, 1833), Martins, "Un naturaliste philosophe: Lamarck, sa vie et ses œuvres," in *Revue des Deux Mondes* (Paris, 1873); De Mortillet and others, *Lamarck: Par un groupe de transformistes, ses disciples* (ib., 1887); A. S. Packard, *Lamarck, the Founder of Evolution: His Life and Work, with Translations of his Writings on Organic Evolution*, with bibliography (New York, 1901), Marcel Landrieu, "Lamarck et ses précurseurs," in *Ecole d'Anthropologie de Paris, Revue*, vol. xvi (Paris, 1906); id., "Lamarck, le fondateur du transformisme, sa vie, ses œuvres," in *Société Zoologique de France, Mémoires*, vol. xxi (ib., 1909); C. F. Cox, "The Founder of the Evolution Theory," in *New York Academy of Science, Annals*, vol. xix (New York, 1910), Friedrich Kuehner (ed.), *Lamarck, die Lehre vom Leben, seine Persönlichkeit und das wesentliche aus seinen Schriften* (Jena, 1913), with bibliography.

LAMARCKISM. The doctrine of J. B. P. A. Lamarck (q.v.), which considers the fundamental or primary factors of evolution in the transformation of species. Lamarck claimed that all living beings arose from germs, through spontaneous generation and that the most primitive was monad-like. In his opinion the first germs of plants and animals were formed in favorable places and under favorable circumstances. The functions of life beginning and an organic movement established, these germs "necessarily gradually developed the organs, so that after a time and under suitable circumstances they have been differentiated" into parts or organs, development proceeding from the simple to the complex. He postulated great length of time, so great "that it is absolutely beyond the power of man to appreciate it in an adequate way." He adds that "with the aid of sufficient time, of circumstances which have been necessarily favorable, of changes of condition that every part of the earth's surface has successively undergone—in a word, by the power which new situations and new habits have of modifying the organs of living beings—all those which now exist have been gradually formed such as we now see them." Vestigial organs are explained as remains of parts which had been actively used by the ancestors of existing forms, but which have become atrophied by disuse. The fact of variation is fully appreciated, as also adaptation to needs. In his opinion specific characters vary most. He points out that the peripheral parts, as the legs, mouth parts, antennæ, etc., are first affected by the causes which produce variations, while it requires a longer time for variation in the internal organs to take place. He also insisted that, when the conditions of existence remain constant, species do not vary.

Lamarck's factors of organic evolution were

seven, as follows. 1. Effects of favorable circumstances due to changes of environment, of climate, soil, food, temperature, etc. Such changes are direct in the case of plants and the lowest animals, but indirect in the case of the higher animals and man.

2. Needs, new physical wants or necessities induced by change of the conditions of life, result in the production of new propensities, new habits and functions. Lamarck showed that change of habits may lead to the origination or modification of organs, that changes of functions also modify or create new organs. He said: "It is easy to demonstrate by observation that uses or habits have given rise to forms," which is another expression for Geoffroy Saint-Hilaire's "C'est la fonction qui crée l'organ," and an anticipation of Dohrn's principle of change of function as a means of modification of organs. (See FUNCTION CHANGE.) Lamarck's use of the word "need" or "necessity" (*besoin*) has been greatly misunderstood and caricatured. He shows, however, that by change of environment animals are subjected to new surroundings, involving new ways and means of living. Thus, certain land birds driven by necessity (*besoin*) to obtain their food in the water, gradually assumed characters, or structures, adapting them for swimming, wading, or for searching for food in the shallow water, as in the case of the *Podiceps* kinds.

3. Use and disuse. The continual use or exercise of organs develops them, as in the wings of birds, etc. The second of these principles he illustrates by the cases of the mole, the whalebone whales, whose rudimentary teeth exist in the embryo, the anteater, the blind Proteus of caves, the eyeless bivalves, and the snakes, whose ancestors lost their limbs in the process of becoming adapted for gliding through brush or grass or similar obstacles.

4. The doctrine of the struggle for existence and of competition was stated by Lamarck. He frequently refers to the precautions that nature has taken to place limits to the too great increase in individuals and the consequent overcrowding of the earth. The stronger and better armed, he says, devour the weak, the large animals devour the smaller. The multiplication of the smaller species is so rapid that these smaller species render the earth inhabitable for others, but their length of life is very short, and nature always preserves them in just proportions, not only for their own preservation, but also for that of other species. The larger species, however, multiply slowly, and thus is preserved the kind of equilibrium which should exist.

5. Lamarck's characteristic doctrine is the inheritance of characters acquired during the life-time of the individual. (See USE INHERITANCE.) This by some writers is regarded as the only feature of Lamarckism, but in reality he discusses the subject very briefly, yet it appears to be a necessary result of the action of use and disuse, and of change of any of the conditions of life.

6. The effects of crossing were considered by Lamarck, and—what has been overlooked by commentators and critics—he clearly insists on the leveling or swamping effects of free intercrossing. He anticipated much modern discussion in his statement: "If, when any peculiarities of form or any defects whatsoever are acquired, the individuals in this case always pair-

ing, they will reproduce the same peculiarities, and, if for successive generations confined to such unions, a special and distinct race will then be formed. But perpetual crosses between individuals which have not the same peculiarities of form result in the disappearance of all the peculiarities acquired by particular circumstances."

7. The principle of geographical isolation (see ISOLATION) was anticipated by Lamarck, who, at the close of the paragraph above quoted, goes on to say: "Were not men separated by distances of habitation, the mixtures resulting from crossing would obliterate the general characters which distinguish different nations" (*Philosophie zoologique*, p. 262). This idea of segregation is also involved in his account of the origin of man from apes. He does not, however, specifically apply this principle to other animals than man.

Lamarck (*Philosophie zoologique*, 1809) summed up his conclusions in the following laws:

"*First Law.*—In every animal which has not exceeded the term of its development, the more frequent and sustained use of any organ gradually strengthens this organ, develops and enlarges it, and gives it a strength proportioned to the length of time of such use; while the constant lack of use of such an organ imperceptibly weakens it, causes it to become reduced, progressively diminishes its faculties, and ends in its disappearance.

"*Second Law.*—Everything which nature has caused individuals to acquire or lose by the influence of the circumstances to which their race may be for a long time exposed, and consequently by the influence of the predominant use of such an organ, or by that of the constant lack of use of such part, it preserves by heredity (*génération*) and passes on to the new individuals which descend from it, provided that the changes thus acquired are common to both sexes or to those which have given origin to these new individuals."

Afterward, in the introduction to the *Animaux sans vertèbres* (1815), he enunciates these principles under four laws, as follows:

"*First Law.*—Life, by its proper forces, continually tends to increase the volume of every body which possesses it, and to increase the size of its parts, up to a limit which it brings about.

"*Second Law.*—The production of a new organ in an animal body results from the supervention of a new want (*besoin*) which continues to make itself felt and of a new movement which this want gives rise to and maintains.

"*Third Law.*—The development of organs and their power of action are constantly in ratio to the employment of these organs.

"*Fourth Law.*—Everything which has been acquired, impressed upon, or changed in the organization of individuals, during the course of their life is preserved by generation and transmitted to the new individuals, which have descended from those which have undergone those changes."

Lamarck failed to catch the idea of natural selection—the essence of Darwinism—though his views on overpopulation were fundamentally like those of Malthus (1798), whose essay on population gave the hint both to Darwin and to Wallace, which became the germ of the theory of natural selection (q.v.). Consult: F. W. Hutton, *Darwinism and Lamarckism, Old and New*

(London, 1899); Samuel Butler, *Evolution Old and New; or The Theories of Buffon, Dr. Erasmus Darwin and Lamarck as Compared with that of Charles Darwin* (New York, 1911); and especially the admirable translation of Lamarck's principal work, by Hugh Elliot, *Zoological Philosophy* (New York, 1914). See EVOLUTION; HEREDITY

LA MARMORA, là măr'mô-rà, ALBERT, COUNT OF (1789-1863). An Italian general and scientist, elder brother of Alfonso. He was born in Turin, was educated for the army at Fontainebleau, and served with distinction, being decorated by Napoleon I after the battle of Bautzen. On account of his participation in the revolutionary movement in Piedmont in 1821, he was disgraced and exiled to the island of Sardinia and remained there for nearly 10 years, during which time he was occupied in the study and investigation of the natural characteristics of the island. The result of his labor appeared in an elaborate report, which is highly esteemed for its accuracy. In 1831, recalled from his exile by the government, he was restored to favor, became a member of the Accademia delle Scienze of Turin, and was made a lieutenant general. On the outbreak of the great movement of 1848 he joined Daniel Manin and became prominent during the unsuccessful revolt of Venice. Later, however, he assumed the character of peacemaker, and by his wise counsels succeeded in allaying much of the irritation which existed among the leaders of the contending parties. Besides several scientific memoirs La Marmora published in French his great work, *Voyage en Sardaigne, ou description statistique, physique et politique de cette île* (5 vols., 1839-57), comprising an atlas and complete description of Sardinia.

LA MARMORA, là măr'mô-rà, ALFONSO FERREIRO, MARQUIS OF (1804-78). An Italian general and statesman, born in Turin. In 1816 he entered the military academy in his native city, becoming a lieutenant in the artillery in 1823. In 1843 he became major and, for his distinguished conduct in the War of 1848 against Austria, was decorated with the medal of valor. The services he then rendered the Sardinian army removed from the mind of Charles Albert a prejudice which his warm advocacy of military reform had aroused in the King. La Marmora was made a brigadier general and in 1849 repressed a rebellion in Genoa. In the same year he entered the cabinet as Minister of War and initiated a series of reforms which amounted almost to the reorganization of the army. In 1855 he was placed in command of the Sardinian troops sent to the Crimea, distinguished himself in the battle of the Tchernaya, and at the close of the war was invested with the Order of the Bath and the Grand Cross of the Legion of Honor and reentered the ministry in his former capacity. He was next to the King in command of the Italian forces in the War of 1859, by which Lombardy was acquired, and upon Cavour's resignation in July presided over the cabinet till January, 1860. In 1861 he was sent to Prussia as Envoy Extraordinary. In November of that year he became Governor of Naples. From 1864 to 1866 he was Prime Minister and concluded the alliance with Prussia. In the campaign against Austria in 1866 he lost the battle of Custoza and resigned his position as chief of staff as well as his portfolio. His last official position was that of Governor of

Rome, which he held from October, 1870, to January, 1871. His account of the secret negotiations between Prussia and Italy (*Un po più di luce sugli avvenimenti del 1866*, Florence, 1873) incurred the denunciation of Prince Bismarck and the censure of the Italian government, in consequence of which La Marmora did not publish the second volume of this work, but defended himself in a work entitled *I segreti di stato nel governo costituzionale* (Florence, 1877). He died in Florence, Jan. 5, 1878. Consult Chiala, *Le général La Marmora et l'alliance prussienne* (Paris, 1878), and Massari, *Il generale Alfonso La Marmora, ricordi Biografici* (Florence, 1880).

LAMARQUE, là'märk', JEAN MAXIMIN, COUNT (1770-1832). A French general and statesman, born at Saint-Sever in the Department of Landes. In 1791 he joined the army as a private soldier and rose to be a captain of grenadiers in the famous corps commanded by Latour d'Auvergne (see TURENNE). He was made a brigadier general in 1801, and distinguished himself in the battle of Austerlitz and in the campaigns of Tirol and Naples. Having taken the island and fortress of Capri from the English in 1808, he was made a general of division and rendered brilliant service in the ... Wagram, in Calabria, and in Spair ... parte's return from the island of Elba he made Lamarque commander in chief of the Army of La Vendée, where the insurrection was quelled and the country pacified. In 1815 he was proscribed by the restored Bourbons and retired to Belgium, where he remained until 1818, when he was permitted to return to Paris. In 1828 he was elected to the Chamber of Deputies from Mont-de-Marsar and became an important member of the opposition, being especially noted for his eloquence and disinterestedness. In 1830 he was active in the July revolution and continued to be prominent until his death, which took place June 1, 1832. The presence of armed guards at his funeral incensed the Republicans and led to the insurrection of June 5-6, 1832. Besides many political pamphlets, such as *De l'esprit militaire de la France* (Paris, 1826) and *La vérité toute entière sur le procès d'un maréchal de France* (ib., 1831), Lamarque left some personal memoirs, which were published by his family, *Souvenirs, mémoires et lettres* (3 vols., ib., 1835-36).

LAMARTINE, là'mär'tèn', ALPHONSE DE (1790-1869). A French lyric poet and statesman, born Oct. 21, 1790, at his father's estate at Milly, near Mâcon, in Burgundy. The poet was reared in an atmosphere of Catholic piety and of ardent devotion to royalty. He seems to have felt very early the beauty of external nature. Lamartine's education was at first intrusted to a priest. Later he attended several not very good schools, and he gathered knowledge by desultory reading and by his own observation, either in France, in Italy, or in the Orient. On the fall of Napoleon he joined the Garde Royale, which he soon quitted. In 1820 he published his *Méditations poétiques*, which struck a note new to French poetry. With *Le lac*, *L'Automne*, *La prière*, *L'Immortalité* we catch the first harmonies of the romantic lyric. A great deal of interest has been manifested recently in the relations of Lamartine to Madame Charles, who inspired *Le lac* and whom Lamartine sang under the name of Elvire. In form the *Méditations* were as lacking in precision as

was the character of Lamartine. Technical flaws are still more numerous in the *Nouvelles méditations* (1823) and in the *Harmonies* (1829). In *Jocelyn* (1836), an epic idyl in Alexandrines, we have the story of a youth who by sacrificing everything that most men desire attains peace of soul. In *La chute d'un ange* (1838) the angel Adar leaves heaven that he may live on earth with Daïdha, a daughter of the Giants. With the *Recueils* (1839) Lamartine returns to the manner of 1820, adding nothing to the theme. In 1820 he had married at Chambéry an English girl, Miss Birch. Soon afterward he went to Italy on diplomacy, and there he had experiences embodied in *Graziella* (1852), an elegy in prose, ending in a poem. In 1829 Lamartine was elected to the Academy. With the year 1830, in which appeared the *Harmonies poétiques et religieuses*, the diplomatic career of the poet, who had been employed in various legations in Italy, came to an end. He tried to get a seat in the Chamber, but failing, he with his wife and daughter set sail in 1832 at Marseilles for the Orient, a pilgrimage of 18 months, which resulted in the *Souvenirs, impressions, pensées et paysages pendant un voyage en Orient* (4 vols., 1839). Lamartine, who during his absence had been elected to the Chamber as deputy from Bergues, Le Nord, took his seat soon after his return from the East. He at once commanded attention by his eloquence and gradually drifted towards Republicanism. In 1847 he came out with his *Histoire des Girondins*, a work of slight historical value, but whose brilliant rhetoric helped to bring about the revolution of 1848. After the February upheaval Lamartine was a member of the provisional government and Minister of Foreign Affairs and represented 10 departments in the Constituent Assembly, enjoying for a few months an immense popularity, which, however, he lost through the insurrection in June. His lame apology was made in *Trois mois au pouvoir* (1848) and in *the Histoire de la révolution de 1848* (1849). Lamartine told about his youthful emotions in the *Confidences* (1849) and in the *Nouvelles confidences* (1851), but the same notes had been struck 30 years before; taste had changed, and he failed to awaken any sympathy. About this time Lamartine's extravagant habits brought him to financial ruin. To better his fortune he wrote history voluminously—*Histoire de la restauration* (8 vols., 1852), *Histoire de la Turquie* (8 vols., 1854-55), *Histoire de la Russie* (2 vols., 1855)—all works of little worth. Lamartine had no fitness for such work; he was preëminently a poet. Napoleon III, in 1867, gave him the income of 500,000 francs. His body was buried at Saint-Point, near Mâcon.

Lamartine's Works appeared in 40 volumes (1800-66). Among the more recent of many Lives and critical studies of Lamartine are: Faguet, *XIXème siècle* (Paris, 1885); Pomairols, *Lamartine, étude de morale et d'esthétique* (ib., 1889); Chamborant de Périssat, *Lamartine inconnu* (ib., 1891); Reyssie, *La jeunesse de Lamartine* (ib., 1892); Deechanel, *Lamartine* (ib., 1893); Rod, *Lamartine* (ib., 1893); Brunetière, *Evolution de la poésie lyrique*, vol. i (ib., 1894); Lemaître, *Contemporains*, vol. vi (ib., 1895). On Lamartine as a statesman, consult: Ronchaud, *La politique de Lamartine* (Paris, 1878); Voglié, *Heures d'histoire* (ib., 1893). There is an English Life by Lady Maynet Domville (London, 1888). For Madame Charles

or the *Elvire* of the *Méditations*, see France, *L'Elvire de Lamartine* (ib., 1893); important and more precise documents have been recently incorporated: R. Doumic, *Lettres d'Elvire à Lamartine* (Paris, 1905), and L. Séché, *Lamartine de 1816-1830, Elvire et les Méditations* (ib., 1905); E. Sugie, *Lamartine* (ib., 1910); P. de Lacretelle, *Les origines et la jeunesse de Lamartine* (ib., 1911).

LAMAS, lá'más, ANDRÉS (1817-91). A Uruguayan statesman and historian. One of the most versatile men that the Americas have thus far produced, he served his country well as soldier, statesman, diplomat, statistician, author, jurisconsult, bibliophile, numismatist, antiquarian, and thinker. From 1839 to 1849 he was Prefect of Montevideo. Later he was Minister of Finance and at various times subsequently acted as Minister to Brazil and to the Argentine Republic. He devoted himself also to the study of South American history, was one of the founders of the Historical Institute of Montevideo, and gradually gathered together a large and valuable collection of manuscripts illustrative of the subject. The latter have been published in part as *Colección de obras, documentos y noticias para servir á la historia del Río de la Plata*.

LAMB, LADY CAROLINE. See MELBOURNE, WILLIAM LAMB.

LAMB, CHARLES (1775-1834). An English essayist and critic. He was born in London, Feb. 10, 1775, and received his education at Christ's Hospital School. An impediment in his speech debarred him from a university appointment, and he left school in 1789 to take a small clerkship under his elder brother in the South Sea House. In 1792 a friend procured him an appointment in the accountant's office of the East India House, a post which he held for 33 years. Insanity, inherited from the mother, cast a gloom over the family life, showing itself once in Charles, who in his twenty-first year was confined in an asylum for a few weeks, and frequently in his sister Mary Ann (born 1764), who in 1796 was suddenly seized with acute mania and stabbed her mother to the heart. This tragedy prevented Charles from marrying Ann Simmons, the "gentle maid" who is alluded to in several sonnets and under the name of Bartram in *Dream Children*. The rest of his life was devoted to his unfortunate sister, whom he refused to place permanently in confinement. In her periods of health she was of great assistance to him in his literary work. Lamb's first published efforts were four sonnets contributed in 1796 to the volume *Poems on Various Subjects* by Coleridge, his old schoolfellow and devoted friend. In 1797 Coleridge published a second edition of his *Poems*, to which Lamb and his friend Charles Lloyd contributed; and in 1798 Lamb and Lloyd issued *Blank Verse*, in which first appeared the exquisite lines entitled "Old Familiar Faces." Lamb did not acquire fame by these poems nor by the tale *Rosamund Gray* (1798), the drama *John Woodvil* (1802), or the farce *Mr. H.* (performed Dec. 10, 1805). In 1807 he received a commission from William Godwin to contribute to his "Juvenile Library." For this series he and his sister wrote their *Tales from Shakespeare* (1807), Mary doing the comedies and Charles the tragedies. This was his first real success and led the next year to the *Adventures of Ulysses*, which Charles wrote single-handed out of Chapman's *Homer*. In 1808

he published *Specimens of English Dramatic Poets Contemporary with Shakespeare*, which was a revelation to his generation, almost totally ignorant of these great writers, and which established his reputation as a critic of rare taste. A collection of his miscellaneous writings in prose and verse appeared in 1818. In 1820 he was invited to join the staff of the *London Magazine* and contributed, as the first of a series of light prose essays, a description of the old South Sea House, signing himself Elia, the name of an old fellow clerk. This and the papers following it, the finest of their kind in the English language, appeared in collected form as *Essays of Elia* (1823) and *Last Essays of Elia* (1833). In 1825 Lamb was retired from his clerkship on account of failing health, and he received a pension of £441 a year, upon which he and his sister removed first to Enfield and finally to Edmonton; but Mary's increasing insanity, separation from literary friends, and the death of Coleridge in 1834 combined to surround the last years of the genial author's life with melancholy. He yet continued to write considerably. To this time belong "Popular Fallacies" (1826) and the beautiful lines on the death of Hood's first child, entitled "On an Infant Dying as Soon as Born" (1828). Lamb died at Edmonton, Dec. 27, 1834. Mary Lamb outlived him nearly 13 years, dying in May, 1847. Lamb belongs to a group of essayists and critics of which the other chief members are Hazlitt and Leigh Hunt. Though he was not so productive as either of his contemporaries, his work is of a finer quality. Time has taken nothing from the charm of the *Essays of Elia*, and in appreciative criticism Lamb is still one of the masters. One of the delights of all his works is the revelation of himself, his pathos, and his humor.

Bibliography. *Letters of C. Lamb, with a Sketch of his Life*, edited by T. N. Talfourd (London, 1837; new ed., ib., 1849), to which he added *Final Memorials* (ib., 1850); the critical biography by Alfred Ainger, in "English Men of Letters Series" (ib., 1882), *Complete Works and Correspondence*, edited by Alfred Ainger (6 vols., ib., 1883-88); *The Lambs, their Lives, their Friends, and their Correspondence*, edited by W. C. Hazlitt (ib., 1897), *Lamb and Hazlitt: Further Letters and Records*, edited by W. C. Hazlitt (ib., 1900); *Works of Charles Lamb and of Mary Lamb*, edited by William Macdonald (12 vols., New York, 1903), Bertram Dobell, *Sidelights on Charles Lamb* (ib., 1903); *Letters: Newly Arranged, with Additions by Alfred Ainger* (2 vols., London, 1904), E. V. Lucas, *Life of Charles Lamb* (2 vols., New York, 1905); id. (ed.), *The Works of Charles and Mary Lamb* (7 vols., ib., 1905, 6 vols., ib., 1913); *Bibliography of the Writings of Charles and Mary Lamb*, compiled by J. C. Thomson (Hull, 1908).

LAMB, CHARLES ROLLINSON (?-). An American artist, born in New York. His brother Frederick and he became known for their work in ecclesiastical art in the Lamb Corporation, which they controlled, for their work in behalf of civic improvement and other artistic movements. Trained as an architect and at the Art Students' League, New York, Charles Rollinson Lamb designed the impressive Dewey Arch, erected in Madison Square, New York, in honor of Admiral Dewey's return (1899), and the Court of Honor at the Hudson Fulton Celebration in 1909. As specialties he devoted most time to religious architecture and to memorial

and historical art. He became vice president of the American Fine Arts Society and was at one time president of the Art Students' League and of the Municipal Art Society of New York.

FREDERICK STYMETZ LAMB (1863-). An American mural painter and designer of stained glasses. He studied at the Art Students' League under Sartain and Beckwith, at the Beaux-Arts, Paris, under Lefèvre and Boulanger, and modeling under M. Millet. He became a member of the National Sculpture Society and of the National Society of Mural Painters and was chosen secretary of the National Arts Club. Gold medals were awarded him at the Atlanta Exposition in 1895 and at the Paris Exposition in 1900. Good examples of his work are a series of historic windows in Plymouth Church, Brooklyn, and a mural decoration, "Conference of General Washington before the Battle of Long Island," Public School No. 5, Brooklyn. In addition he lectured and wrote on civic art.

ELLA CONDIE LAMB (?-). The wife of Charles R. Lamb. She became chiefly known as a mural painter and designer of stained glasses and mosaics. Born in New York, she studied under William Chase, Walter Shirlaw, and C. Y. Turner, in England under Sir Hubert Herkomer, and in Paris under Collin and Courtois. She became a member of the National Society of Mural Painters and received a gold medal at the Atlanta Exposition in 1895. Good examples of her mural decorations are: "The Open Book," Governor Flower Memorial Library, Watertown, N. Y.; the Governor Baldwin Memorial, St. John's Chapel, Detroit, the Sage Memorial figures of Arts and Sciences, Cornell University; and the Russell Memorial, Wells College.

LAMB, DANIEL SMITH (1843-). An American physician, born in Philadelphia. He studied medicine at Georgetown University, served in the Civil War as a private and then in the military hospitals at Alexandria, Va., became assistant surgeon at the Army Medical Museum in 1868, and in 1892 was appointed pathologist in the latter institution. After 1873 he was professor at Howard University, first of materia medica and then of anatomy, and from 1894 to 1900 he held the chair of general pathology in the United States College of Veterinary Surgeons. He conducted post-mortem examinations of President Garfield, Henry Wilson, Senator Preston Smith Brooks, and Garfield's assassin, Guiteau. A member and officer of various medical and other scientific societies, Lamb edited the *Washington Medical Annals* and published a *History of the Medical Department of Howard University* (1900), besides monographs on medical, sanitary, and anthropological subjects.

LAMB, HORACE (1849-). An English mathematician and physicist, born in Stockport. He was educated at Owens College, Manchester, and at Trinity College, Cambridge, of which he was fellow and assistant tutor in 1872-75. After being professor of mathematics for 10 years at the University of Adelaide, Australia, he returned to England in 1885 and became professor of mathematics at Owens College. He became a fellow of the Royal Society in 1884 and was Royal medalist in 1902 and vice president of the society in 1909-10. Lamb wrote, besides papers for scientific periodicals, *The Mathematical Theory of the Motion of Fluids* (1878); *Hydrodynamics* (1895; 3d ed., 1906); *Infinitesimal Calculus* (1897; 3d ed., 1907); *Dynamical*

Theory of Sound (1910); *Statics, Including Hydrostatics and the Elements of the Theory of Elasticity* (1912).

LAMB, JOHN (1735?-1800). A Revolutionary soldier, born in New York. In his early years he worked with his father, a skillful optician, and in 1760 he became a wine merchant. He was a prominent member of the Sons of Liberty and conducted much of the correspondence with similar bodies in other cities. He was conspicuous in resistance to the Stamp Act and went to Philadelphia to urge a firm stand against that measure. In July, 1775, he was commissioned a captain of artillery, and on August 23, acting under orders from Congress, removed the cannon from the Battery in New York. He took part in the expedition under General Montgomery against Montreal and Quebec and at the latter place led the van of the storming party and was seriously wounded and taken prisoner. Before his exchange he was promoted to be major and afterward became a colonel. He was in command of West Point at the time of Arnold's treason. After the close of the war he was a member of the Assembly and was appointed collector of customs at New York. He opposed violently the adoption by New York of the Federal Constitution, but nevertheless was continued in his office by Washington. He was ruined by a defaulting clerk and died in poverty. Consult Leake, *Memoir of the Life and Times of General John Lamb* (Albany, 1850).

LAMB, MARTHA JOANNA READE NASH (1829-93). An American historian, born at Plainfield, Mass. Though born and brought up in Massachusetts and for some years a resident of Chicago, she spent most of her active life in New York City (1866-93). From 1883 till her death she edited the *Magazine of American History*, in which she published many of her own essays. Her chief book, the *History of the City of New York* (2 vols., 1877-81), was the valuable result of about 15 years of patient labor and research. Other volumes worthy of citation are *The Homes of America* (1879) and *Wall Street in History* (1883).

LAMB, MARY (ANN). See LAMB, CHARLES.

LAMB, WILLIAM, LORD MELBOURNE. See MELBOURNE, WILLIAM LAMB.

LAMBESA. See LAMBESSA.

LAMBALLE, lān'bāl', MARIE THÉRÈSE LOUISE DE SAVOIE-CARIGNAN, PRINCESS OF (1749-92). A friend of Queen Marie Antoinette. She was born at Turin, the daughter of Prince Louis Victor Amadeus of Carignan. She married in 1767 the Prince de Lamballe, who soon after died a victim of debauchery. Timid, tender, and self-sacrificing, the young widow became the devoted friend and chosen companion of Marie Antoinette, who appointed her superintendent of the royal household, and as an innocent agent in the Queen's intrigues incurred the bitter hatred of the populace. After a short estrangement, when the Countess de Polignac supplanted her in the favor of the Queen, Marie Antoinette turned again to her former friend, whose salon became the meeting place of the Queen and those members of the assembly of notables whom the Queen sought to win over. The Princess of Lamballe fled to England after the attempted flight of the royal family in June, 1791, but rejoined the Queen in November. After Aug. 10, 1792, she received permission to share the captivity of the Queen, but was soon separately immured in the prison of La Force. On

September 3 she was brought before the Tribunal and commanded to swear that she loved liberty and equality and hated the King, the Queen, and royalty. "The first oath," she replied, "I will swear, but the rest I cannot; my heart rebels against it." "Let madame go!" said the president, and at this two men conducted her to the door, where she was torn to pieces by the mob, who paraded her head on a pike under Marie Antoinette's windows at the Temple. A royalist legend praised her behavior in her last hours, but more reliable sources depict her in a state of complete collapse at her trial. Some of her letters are published in volume xxxix of *La révolution française* (Paris, 1900). Consult: Comte de Lescare, *La princesse de Lamballe* (Paris, 1864); G. Bertin, *Mme. de Lamballe* (ib., 1888); Austin Dobson, *Four French Women* (London, 1890); B. C. Hardy, *Princesse de Lamballe* (ib., 1908).

LAMBAYEQUE, lām'bā-yā'kā. A maritime department in northwest Peru, bounded by the Department of Piura on the north, Cajamarca on the east, Libertad on the south, and the Pacific Ocean on the west (Map: Bolivia, B 5). Its area is estimated at 4615 square miles. The greater part consists of a coastal plain with a number of low ridges running down from the cordillera, which also traverses the northeastern part of the department. The soil, except along the river courses, is mostly arid. The chief agricultural products are sugar, tobacco, cotton, and rice. Some good grazing land is found on the mountain slopes. Pop. (est.), 127,000. Capital, Chiclayo.

LAMBAYEQUE. A city of the Peruvian department of the same name, situated on the river Lambayeque, about 6 miles from the sea (Map: Bolivia, A 5). It has manufactures of cotton and woolen goods, is connected by rail with the seaport of Pimentel and is of considerable commercial importance. Pop. (est.), 8000, including many negroes and Chinese coolies.

LAMBEAUX, lām'bō', JEF (JOSEPH MARIE THOMAS) (1852-1908). An eminent Belgian sculptor. He was born at Antwerp, studied at the academy under Geefs, and was early apprenticed to a wood carver. Owing to his great poverty, his early works were executed to please popular taste and were chiefly humorous. He later studied at Paris, whence he sent home "The Kiss" (1881, Antwerp Museum), his first important group. It established his reputation and won him a stipend for a journey to Italy, where he studied the great Florentine sculptors, particularly Jean Boulogne. His chief inspiration, however, was drawn from the great Flemish masters. His style is pictorial rather than plastic, his combinations of line are often startling, and his compositions, often too crowded, throb with exuberant life and impassioned movement. Among important works by him are: "The Wild Song" (1884); "The Brabo Fountain," in front of the Hôtel de Ville, Antwerp; "Drunkenness"; "The Bitten Faun"; "The Robber of the Eagle's Nest"; and the busts of the poet Conscience and Burgomaster Buls of Brussels. His last work, one of the most striking productions of modern sculpture, is the colossal bas-relief, "The Passions of Man" (Parc du Cinquantenaire, Brussels)—an assemblage of surging figures, typifying the struggle between good and evil.

LAMBECK, lām'bēk, or **LAMBECCIUS**,

lām'bēk'tai-us, PETER (1628-80). A German scholar, born at Hamburg. He was educated at Hamburg, Amsterdam, Paris, and Rome. In 1651 he was made teacher of history in the Gymnasium at Hamburg and in 1660 its rector. After joining the Catholic church in 1662 he went to Vienna, where he was appointed librarian of the Imperial Library (1665). His works include: *Commentarii de Bibliotheca Cæsarea Vindobonensi* (1655-79); *Rerum Hamburgensium Libri* (1653-61); *Syntagma Antiquitatum Constantinopolitanarum* (1655); *Platina Historia Urbis Mantuæ* (1675); and the really valuable *Prodromus* of the uncompleted *Historia Literaria* (1710), the opening part of a literary history of the world.

LAMBERT, ALEXANDER (1862-) An American pianist, born in Warsaw, Poland. His musical instruction was begun in 1872 by his father, who was an accomplished musician. In 1876 he was sent by the advice of Rubinstein to the conservatory at Vienna, where he studied for four years under Epstein, graduating in 1880. After another period of study, part of which was spent with Urban at Berlin, he went in 1881 to New York, where he gave a series of concerts. Returning to Europe, he made a concert tour through Germany and Russia and then resumed his studies under Liszt at Weimar. In 1884 he returned to America, where for several seasons he played in concert. From 1888 to 1906 he was director of the New York College of Music. He composed considerable music, but is best known as a remarkably successful teacher and for his arrangement of a valuable *Systematic Course of Studies* (6 vols., 1892).

LAMBERT, lām'bār', EUGÈNE LOUIS (1825-1900). A French animal painter, born in Paris and often called "Lambert des chats" on account of his fondness for painting cats. He was a pupil of Delacroix and Delaroche. His first Salon picture was hung in 1847, and his early work was with birds and still life; but he struck his keynote in "Cat and Parrot" (1857). His paintings abound in the United States. Typical examples of his work are "Cat and Kittens," in the Metropolitan Museum, New York, and "Family of Cats," in the Luxembourg. He designed fascinating illustrations for Cherville's *Chiens et chats* (Paris, 1889).

LAMBERT, lām'bärt, FRANZ, or LAMBERT OF AVIGNON (c.1486-1530). A German Protestant reformer. He was born in Avignon, became a Franciscan friar at an early age, was ordained a priest, and preached with success. In 1522, having been refused permission to join the Carthusians, he embraced the doctrines of the Reformers. He threw aside the garb of his order and began to preach the Reformed faith in Germany and Switzerland. He joined Luther in 1523 at Wittenberg and thence proceeded to Metz and Strassburg. A Protestant academy having been established at Marburg, he became its first professor of theology. He propounded a scheme for the government of the churches by a synod, which was too democratic for the approval of the Lutheran authorities. In 1529 he took part in a general conference of theologians held at that place from the different German provinces. On the whole, his theology was rather Zwinglian than Lutheran. Consult his *Life* by Baum (Strassburg, 1840), Hassenkamp (Elberfeld, 1860), Ruffet (Paris, 1873).

LAMBERT, JOHANN HEINRICH (1728-77). A German philosopher, astronomer, and mathe-

matician, born at Mülhausen in Alsace. He was the son of a poor tailor and obtained his education by his own exertions. At 16 years of age he discovered, in computations for the comet of 1744, the so-called "Lambert's theorem." In 1746 he was made secretary to the philosopher Iselin in Basel, and two years later he became tutor in the family of Count Salis at Chur. In 1756 he began extended travels with his pupils and thus made the acquaintance of many learned men. Three years later he was made professor in the Munich Academy, and in 1765 he became a member of the Academy of Berlin. He wrote extensively on various subjects. His philosophical studies at first claimed the interest of Kant, with whom he corresponded. His *Neues Organon* (1764), in particular, sought the establishment of a philosophical system which, by its investigation of the theory of knowledge, or the power of the understanding to recognize truth, was in opposition to the current method of Wolff. The expectation thus aroused were disappointed by his *Anlage zur Architektonik* (1771), which, though it postdated Kant's dissertation *De Mundi Sensibilibus et Intelligibilibus Forma et Principiis* (1770), adhered to the old scheme of ontology. In physics he did notable work in photometry, pyrometry, and hygrometry, devising original apparatus and methods. In astronomy he was the author of views held to-day concerning the nature of the fixed stars, especially the Milky Way. His contributions to mathematics were the series which bears his name, the conception of the hyperbolic function, and the demonstration of the incommensurability of π . Parts of his works served as starting points for Lagrange and Gauss. His principal works are the following: *Die freie Perspective* (German and French, 1759; 2d ed., 1774); *Beschreibung und Gebrauch der logarithmischen Rechenstäbe* (1761, 1772); *Beiträge zum Gebrauche der Mathematik und deren Anwendung* (4 vols., 1765, 1770, 1772); *Kurzgefasste Regeln zu perspectivischen Zeichnungen* (1768, 1770); *Zusätze zu den logarithmischen und trigonometrischen Tabellen* (1770). Consult: Huber, *Johann Heinrich Lambert nach seinem Leben und Wirken* (Basel, 1829), which contains a list of his writings; Lepsius, *Johann Heinrich Lambert, eine Darstellung seiner kosmologischen und philosophischen Leistungen* (Munich, 1881); Rudio, *Archimedes, Huygens, Lambert und Legendre* (Leipzig, 1892); Otto Baensch, *Lamberts Philosophie und seine Stellung zu Kant* (Tübingen, 1902); Friedrich Schur, *Johann Heinrich Lambert als Geometer* (Karlsruhe, 1905).

LAMBERT, JOHN (1619-83). An English Parliamentary general. He was born at Kirkby Malham in Yorkshire, Sept. 7, 1619; was educated for the law, but on the outbreak of the Civil War became a captain under Fairfax. He fought with conspicuous bravery at Marston Moor, at Naseby, in Scotland, and at Worcester, and in the years of the Commonwealth was, perhaps, second to Cromwell in political influence. He was one of the principal authors of the *Instrument of Government* and favored a representative democracy or a limited monarchy as against an oligarchy. After the death of the great Protector he became the head of the cabal of malcontent officers who overthrew the feeble administration of Richard Cromwell. Lambert, as the leader of the Fifth Monarchy, or extreme Republican party, suppressed with considerable vigor the Royalist insurrection in Cheshire, Au-

gust, 1659; and two months afterward, dismissing the remnant of the Rump Parliament, virtually governed the country along with his officers, under the title of the Committee of Safety. For a brief period his position was considered so important that Charles II was advised to make terms with him by marrying his daughter. The counterplot of Monk, however, frustrated his designs and on April 22, 1660, he was taken prisoner by Colonel Ingoldsby, tried in 1662, and banished to the Isle of Guernsey. On the discovery of a plot for his escape in 1667, he was sent to Drake's Island, Plymouth Sound, where he died in 1683. He was a capable general, distinguished by personal bravery and clemency to his opponents, and was familiarly called Honest John Lambert by his associates.

LAMBERT, JOHN (c.1775-?). An English traveler, who sojourned in North America (1806-09). His scheme of introducing hemp culture into the British colonies was not a success, but his explorations of "those parts rendered interesting by the glories of a Wolfe and a Washington" were more fortunate, and his book, *Travels through Lower Canada and the United States of North America in the Years 1806, 1807, and 1808* (3 vols., 1810), is particularly broad-minded in tone. Lambert also edited Washington Irving's *Essays* (2 vols., 1811), with a lengthy preface. His later years were lived in obscurity.

LAMBERT, LOUIS A. (1835-1910). An American Roman Catholic clergyman, born at Allenport, Pa. He was educated at St. Vincent's College and at the Diocesan Seminary at St. Louis. Ordained a priest in 1859, he was chaplain of the Eighteenth Illinois Infantry during the Civil War. Afterward he served as professor of normal theology and philosophy at the Paulist Novitiate. His side of the controversy in which he and Robert G. Ingersoll were involved in the early eighties was published as a book, and his reply to one of Ingersoll's disciples appeared as the pamphlet *Tactics of Infidels*. Bishop McQuaid of Rochester, who had refused to assign Dr. Lambert to a parish in his diocese, was overruled by a decision of the Pope. Lambert then received the rectorship of the church of the Ascension at Scottsville, N. Y., where he remained until his death. For many years he edited the *Freeman's Journal*.

LAMBERTI, lām-bĕr'té, NICCOLÒ. See NICCOLÒ OF AREZZO.

LAMBERTON, BENJAMIN PEFFER (1844-1912). An American naval officer, born in Cumberland Co., Pa. In 1864 he graduated from the United States Naval Academy. He served in the closing operations of the Civil War, was a member of the Bureau of Equipment in 1879-82, and was lighthouse inspector of the sixth district in 1885-88 and of the fifth district in 1894-98. For his services as chief of staff under Commodore Dewey in the battle of Manila Bay he was advanced seven numbers in rank, becoming captain of Dewey's flagship *Olympia*. He was a member of the Naval Examining and Retiring Board in 1900 and of the Lighthouse Board in 1900-03, became rear admiral in 1903, commanded the South Atlantic squadron in 1903-04, was a member of the Naval War College in 1904, was chairman of the Lighthouse Board in 1905-08, and retired in 1906.

LAMBERTVILLE. A city in Hunterdon Co., N. J., 16 miles northwest of Trenton, on the Delaware River, the Delaware and Raritan

Canal, and the Pennsylvania Railroad (Map: New Jersey, C 3). It has good water power and among its industrial establishments are a tomato cannery, rubber mills, paper mills, stone quarries, foundry and machine shops, flouring mills, and manufactories of pottery, hairpins, wire novelties, etc. There is a public library. First incorporated in 1849, Lambertville is now governed under a revised charter of 1904, which provides for a mayor, elected every two years, and a common council. The city is situated on the site of the ferry on the old York Road from Philadelphia to New York and was known formerly as Coryell's Ferry and later as Georgetown. Pop., 1900, 4637; 1910, 4657.

LAMBERT VON HERSFELD, lām'bért fŏn hĕrs'fĕlt (died c.1088). A German historian of the eleventh century, born probably in Thuringia. Having received a superior education, he entered the Benedictine monastery at Hersfeld in 1058, in the same year was ordained priest, and made a pilgrimage to the Holy Land. His reputation as one of the best mediæval writers is based upon his principal work, the *Annals*, first printed in 1525 (new ed., Hanover, 1874, trans. into Ger. by Hesse, Leipzig, 2d ed., 1893), a history of the world from the earliest times to 1077, only the period from 1039 on, however, showing an independent treatment in giving a comprehensive and well-arranged account of contemporaneous events, told with great clearness and grace of style. An admirer and staunch adherent of Pope Gregory VII, he did not spare Henry IV. He was also the author of *Carmen de Bello Saxonico*, edited by Pannenberg (Göttingen, 1892). Consult *Lambert von Hersfeld und die deutsche Geschichtsschreibung* (Cassel, 1896), and the article in the *Allgemeine deutsche Biographie*, vol. xvii (Leipzig, 1883).

LAMBERVILLE, lām'bār'vĕl', JEAN DE (?-1699). A French Jesuit missionary to the Iroquois Indians of North America. He settled at Onondaga, their chief village, in 1671, having by that time been about three years in Canada, and he became a powerful agent for keeping his savage flock friendly to the French. By extending his influence to the mighty Senecas, he was enabled to frustrate the designs of Governor Dongan, of New York, who strove to hold the Iroquois League an ally of the English. Père Lambertville had good backing while Frontenac was Governor at Quebec, but when the latter was replaced by weaker men, the life of the missionary was endangered by the treacherous seizure of Iroquois who had crossed to Cataract (now Kingston), Ontario, for a peaceable conference, and he had to make his escape (1687). He died in France, and his younger brother, Jacques, succeeded him among the Onondagas, but he, too, was forced to fly (1709), and the mission was abandoned. Consult *The Jesuit Relations*, edited by R. G. Thwaites (Cleveland, 1896-1901).

LAMBÆSA (ancient *Lambæsa*). A town in Algeria, 7 miles southeast of Batna and 17 west of Timgad. The town has a great convict establishment, which dates from about 1850. It is, however, chiefly interesting because of its Roman remains. These include a triumphal arch to Septimius Severus, another to Commodus, temples (to Jupiter, Juno, and Minerva, another to Æsculapius), aqueducts, an amphitheatre, baths, and remains of private houses. Remains have been found, too, of a great Roman

camp 1640 feet by 1476; within this are ruins of a fine building dating from 286 A.D. In volume vii of the *Corpus Inscriptionum Latinarum* appear 4185 inscriptions from the ruins of Lambæsa; 2500 of these relate to the camp. The camp dates from the time of Hadrian, 123-129 A.D. Till 392 a legion was quartered there; on its withdrawal the decline of the town began. Consult: Boissier, *Roman Africa* (New York, 1899; see Index, s.v. *Lambèse*); Gsell, *Les monuments antiques de l'Algérie* (Paris, 1901); Graham, *Roman Africa* (London, 1902); Gsell, *L'Algérie dans l'antiquité* (Paris, 1903); Bouchier, *Life and Letters in Roman Africa* (Oxford, 1913).

LAMBETH. A metropolitan borough of London, in Surrey, on the south bank of the Thames, 1¾ miles southwest of St. Paul's Cathedral and opposite Westminster, with which it is connected by four bridges. Area, 6¼ square miles. Pop., 1901, 301,895; 1911, 298,058. It includes the four districts of Vauxhall, Kennington, Norwood, and Brixton. Its most interesting building, Lambeth Palace, with the parish church, has been the metropolitan residence of the Archbishop of Canterbury since 1197 and contains a fine portrait gallery and a library with 30,000 volumes and valuable manuscripts. Other noteworthy features are St. Thomas's Hospital, several benevolent institutions and fine public buildings: the Surrey Zoological Gardens, and Brockwell, Wandsworth, and Vauxhall parks, the latter the site of the famous Vauxhall Gardens. The numerous industrial establishments include potteries, glassworks, machine works, and breweries.

LAMBETH ARTICLES. The name given to a statement concerning the doctrines of predestination, justification, and free will drawn up at Lambeth Palace in 1595 by William Whitaker, master of St. John's College, Cambridge, and others who agreed with him in holding Calvinistic views. They were approved by Archbishop Whitgift and sent to Cambridge with direction that the scholars should conform to them, but were recalled by order of Queen Elizabeth. The articles are nine in number and strongly Calvinistic in tone. Consult Schaff, *Creeds of Christendom* (New York, 1881), and Curtis, *History of Creeds and Confessions* (Edinburgh, 1911).

LAMBETH CONFERENCE. A gathering of all the bishops of the Anglican communion, held at Lambeth Palace, the official residence of the Archbishop of Canterbury, and under his presidency. The idea of such an assembly was suggested as early as 1851 by Bishop Hopkins, of Vermont; but the first formal request to call it was made by the Canadian bishops in their provincial synod of 1865, the desire growing out of the disquiet caused by the complications of Bishop Colenso's case. Archbishop Longley issued the first invitation in 1867, and it was accepted by 76 bishops. The second conference was held in 1878, in response to the demand of those who realized the usefulness of the first; this time 100 bishops met, under Archbishop Tait. In 1888, under Archbishop Benson, 145 were present; and in 1897 Archbishop Temple presided over 194. In 1908, under Archbishop Davidson, 241 met. The conference does not pretend to legislate or to formulate doctrine; but its value as a means for the interchange of counsel on problems of the day has been so generally felt that it is likely to continue at intervals of approximately 10 years. Its most important single act has

been the promulgation of a basis for the establishment of Christian unity in 1888, known as the Lambeth Quadrilateral—the Holy Scriptures, the Apostles' and Nicene creeds, the two sacraments, and the historic episcopate. A full official report of the origin and the proceedings of the first three meetings has been published by Dr. Davidson, who became Archbishop of Canterbury in 1903, *The Lambeth Conferences of 1867, 1878, and 1888* (London and New York, 1889); *Conference of Bishops of the Anglican Communion* (London, 1897, 1908).

LAMBETH DEGREES. See DEGREES, LAMBETH.

LAMBIN, lām'bān', DENYS. See LAMBINUS, DIONYSIUS.

LAMBINUS, DIONYSIUS (DENYS LAMBIN) (1520-72). A French classical scholar. He was born at Montreuil-sur-Mer in Picardy and studied at Amiens and for several years in Italy. From 1561 he was professor of Latin and Greek at the Collège Royal in Paris and won fame by his editions of classical authors, especially of Horace (1561), Lucretius (1563), Cicero (1566), Nepos (1569), Demosthenes (1570), and Plautus (published after his death, in 1576). These profound works have formed the basis of unnumbered modern editions. Consult the preface to Munro's edition of Lucretius (4th ed., London, 1898), and Sandys, *A History of Classical Scholarship*, vol. ii (Cambridge, 1908).

LAMB'KILL. A North American evergreen shrub. See KAIAIA.

LAMBREQUIN, lām'brē-kīn. See MANTLING.

LAMBROS, lām'brōs, SPYRIDION (1851-). A Greek historian, born in Corfu, son of an eminent numismatist. He was educated at Athens, Berlin, and Leipzig. In 1878 he became an instructor in the University of Athens, in 1882-85 was in the Hellenic Ministry of Education in charge of the section on public schools, and in 1887 became professor of ancient history in the University of Athens, of which he was rector in 1904-05. In 1903 he became general secretary of the committee for the Olympic games. Lambros translated into Greek Curtius' *Griechische Geschichte* (1898-1900), Gregorovius' *Geschichte der Stadt Athen im Mittelalter* (1903-04), Maunde Thompson's *Handbook of Palaeography* (1903), etc. He edited *Néos Ἑλληνορνήμων*, a periodical containing material on Greek literature and history from libraries, archives, and monasteries of the Orient. Among Lambros' published books are a history of Athens (1878, in Greek); *Collection de romans grecs en langue vulgaire et en vers* (1880), a six-volume history of Greece (1886-1908, in Greek); *Catalogue of the Greek Manuscripts on Mount Athos* (1895-1901); *Ἀργυροπούλεια* (1909).

LAMBRUSCHINI, lām'brōō-skē'nā, LUIGI (1776-1854). An Italian cardinal, Secretary of State under Gregory XVI. He was born at Genoa, entered the Order of Barnabites while he was very young, and was secretary of Cardinal Consalvi at the Congress of Vienna. In 1819 he was made Archbishop of Genoa and in 1827 was Nuncio to Paris, where he stayed until the revolution of July, 1830. In 1831 he was made Cardinal, and in 1836 succeeded Bernetti as Secretary of State, at a particularly trying time. He was opposed to innovation and did his best to carry out the papal policy of temporal control. He was author of the famous

allocutions in connection with the quarrel between the Bishop of Cologne and Prussia. In 1842 he became Bishop of Sabina and in 1847 of Porto. On the outbreak of the Roman revolution of 1848 he had to flee to Civitavecchia and later to Naples and finally joined Pius IX at Gaeta. He returned to Rome with the Pope in 1850. In the meantime all his real and personal property had been plundered. Among his writings are *Opere spirituali* (1838) and *Sull' immacolato concepimento di Maria* (1843).

LAMBRUSCHINI, RAFFAELLO, ABBÉ (1788-1873). An Italian writer and teacher, born at Genoa. He studied for the priesthood in Rome, where his uncle, Luigi Lambruschini (1776-1854), was Cardinal and Secretary of State. Upon his return to Tuscany he devoted himself to the natural sciences, especially agriculture, and founded the *Giornale Agrario Toscano* (1827). Afterward he opened a school at his villa of San Carboni and put into practice his theories of education. In connection with his work he published *La guida dell' educatore* (1836-44). In 1848 he was a member of Parliament, and after the annexation of Tuscany Victor Emmanuel made him senator (1860). Among his writings are *Libri dell' educazione* (1849) and *Dell' istruzione* (1871).

LAMBS' CLUB, THE. A social club in New York City, composed chiefly of actors, dramatists, and artists. It had its origin in a group of actors, newspaper men, and other Bohemians, who were in the habit of dining together periodically at the United States Hotel in 1873 and 1874. They organized the club in 1874, modeling it after the Lambs' Club of London, founded by John Hare, George Du Maurier, Sir Douglas Straight, and others. The Lambs has escaped the fate of many similar organizations and preserved its distinctively theatrical character through a wise provision of the constitution. Although nonprofessional members are admitted, the constitution limits their number to one-third of the membership. The clubhouse, at 128 West Forty-fourth Street, is a handsome building, one of the chief features of which is its theatre, where the Lambs hold their annual "gambol." The chief executive officer of the club is the Shepherd, the vice president is the Boy, while the officer who manages and directs the club is known as the Collie. Each year at the close of the theatrical season, the club makes a tour of the principal cities with an entertainment made up of the parts of various plays in which its principals have appeared. This tour is a notable event in the theatrical world, closing the year. The net receipts of these trips have been large and have enabled the club to provide itself with its present clubhouse.

LAMBS' LETTUCE. A salad plant. See C'ORN SAIAD.

LAMBTON, JOHN GEORGE, first EARL OF DURHAM. See DURHAM.

LAMEGO, lá-mā'gō. An old town of Portugal, in the Province of Beira, situated amid rocky mountains 3 miles south of the Douro and 43 miles east of Oporto (Map: Portugal, B 2). It has a Gothic cathedral and a bishop's palace, a Moorish citadel, and some Roman baths. It exports wine and hams. Pop., 1900, 9179. It figured conspicuously in the wars between the Moors and the early kings of León and was captured by Ferdinand I of Castile and León in 1057.

LAMELLIBRANCHIA, là-měl-li-brân'ki-â, or **LAMELLIBRANCHIATA**, -brân'ki-â'tâ. See PELECYPODA.

LAMEL/LICORN (from Lat. *lamella*, thin metal plate + *cornu*, horn). A beetle of the family Scarabæidæ, so named because the club of the antenna is composed of three or more joints which are broad, leaflike, and closely appressed so as to have the appearance of one piece. See SCARABÆIDÆ; BEETLE.

LAMENNAIS, làm'nâ', HUGUES FÉLICITÉ ROBERT DE (1782-1854). A French religious and political writer, of great influence in the second quarter of the nineteenth century. He was born at Saint-Malo and educated largely by his uncle, a fervent opponent of the Encyclopædists. The boy, however, was a passionate admirer of Rousseau. His first published work, *Réflexions sur l'état de l'église en France pendant le XVIIIème siècle* (1808), was a vigorous attack on materialistic philosophy. In conjunction with his brother, after the fall of Napoleon, who had suppressed the former work, he produced *La tradition de l'église sur l'institution des évêques* (1814). On Napoleon's return he was obliged to take refuge in England, where he was befriended by Abbé Caron. In 1815 he entered the Seminary of St Sulpice and was ordained priest the following year. His next work—the first volume of his *Essai sur l'indifférence en matière de religion* (1817; Eng. trans., London, 1898)—made his name famous throughout Europe. The second volume (1820) was occupied with the difficult problems of the theory of certitude—that truth can be certified, not by the individual reason, but only a universal consensus of belief—and he sought to find the essence of Christianity in all the religions of history. He expanded his system at greater length in two succeeding volumes (1821-23) and put forward a *Défense de l'essai sur l'indifférence* (1822) against an opposition of increasing violence, in which his old Seminary of St. Sulpice and most of the French bishops joined. He turned from these controversies to equally convinced and eager public action. With Chateaubriand he defended absolute monarchy in the *Conservateur* of 1818-20; in the *Défenseur*, the *Drapeau Blanc*, and the *Quotidienne* he stood with the extreme Royalists. He attacked the remains of the Gallican spirit in the clergy and criticized the University of Paris, the religious orders, and the bishops with a bitterness that did no good. On his visit to Rome in 1824 his friendly reception by Pope Leo XII gave rise to the rumor that he was to be made a cardinal; but, as his ultramontanist had alienated the Gallican bishops, so his democracy soon alienated the Pope.

Upon the accession of Louis Philippe, Lamennais, with Lacordaire (q.v.) and Montalembert (q.v.), established a journal called *L'Avenir*, which boldly demanded liberty of conscience, of education, of the press, free intercourse with Rome, abstinence from government interference in episcopal elections. The paper grew powerful, and the government, which had laughed at it, now threatened it. Lamennais and Lacordaire were prosecuted, and the former threw himself more ardently into opposition. In 1832, after some of his writings had been censured by a synod of southern French bishops at Toulouse, he went to Rome to lay his case before the Pope, but only to find defeat, in the encyclical *Munari Vos*. In obedience to the Pope, he

suspended the publication of *L'Avenir* and professed submission, which, however, he showed in his letters and anonymous articles was far from being thorough, and on Nov. 5, 1833, he spoke out unmistakably in a letter, addressed to the Pope but published at the same time, which made an unequivocal claim to the right of perfect freedom of thought and expression in matters purely political and secular. However, when an answer came from Rome requiring an unconditional submission to the teaching of the encyclical, he finally yielded to the entreaties of his brother and the Archbishop of Paris, and on December 11 signed the required formula. None the less he took occasion to make it known that he had submitted merely for the sake of peace.

It became abundantly clear, in fact, that Lamennais was drifting further away from his old faith, when in May, 1834, he published *Paroles d'un croyant*—in Guizot's phrase, "the words of a believer who has lost his faith." It was nothing less than a formal declaration of war against monarchy and papacy at once, preaching revolution as a sacred duty and looking to the emergence of a new civil society and a new Christianity. Various governments suppressed the book as fast as it was translated, and the Pope condemned it in the encyclical *Singulari Nos* of July 15, 1834. Lamennais' defense appeared under the title *Affaires de Rome* (2 vols, 1836), preaching a combination of deism and democracy as the religion of the future. For *Le pays et le gouvernement* (1840) he was condemned as seditious and punished by a year's imprisonment and a fine of 2000 francs. On his release he pursued his crusade with unrelenting bitterness. Though one of the fundamental dogmas of his religion he endeavored to retain it as a religion of brotherhood, and in his *Esquisse d'une philosophie* (4 vols, 1841-46) threw his ideas into philosophical form. He hailed the revolution of 1848 as the dawn of the new day, and, as a deputy to the Constituent Assembly, drew up a complete plan for a social organization which was to be the salvation of France and of Europe. When it was rejected, he took no further part in public affairs and sunk into deep despondency. The coup d'état of December, 1851, put the "new" stroke to his hopes. He died Feb. 27, 1854, refusing all religious ministrations, and was buried, by his own request, without ceremony in an unmarked grave in Père-Lachaise.

Bibliography. *Œuvres complètes* (2d ed., 10 vols, Paris, 1844-47); *Œuvres posthumes*, edited by Forgues (5 vols, ib., 1855-58); *Œuvres inédites*, edited by Blaize (ib., 1866); *Correspondance* (2d ed., by Forgues, ib., 1864); *Confidences de Lamennais*, edited by Bois de la Villerabel (ib., 1880); *Lettres inédites à Montalembert*, edited by Forgues (ib., 1898); *Essai d'un système de philosophie catholiques* (ib., 1906); *Lamennais et David Richard* (ib., 1909); Renan, *Essais de morale et de critique* (ib., 1854); Scherer, *Études sur la littérature contemporaine* (ib., 1876-83); Sainte-Beuve, *Portraits contemporains* (ib., 1881-82); Kaufmann, *Christian Socialism* (ib., 1888); Dowden, *Studies in Literature* (2d ed., London, 1889); Janet, *La philosophie de Lamennais* (Paris, 1890); Spuller, *Lamennais* (ib., 1892); Gibson, *The Abbé de Lamennais and the Liberal Catholic Movement in France* (London, 1896);

Roussel, *Lamennais intime* (Paris, 1897); Brandes, "The French Reaction," in *Main Currents of Nineteenth Century Literature*, vol. iii (London, 1903); Lilly, "Nineteenth Century Savanarola," in *Studies in Religion and Literature* (St. Louis, 1905); Boulard, *Lamennais, sa vie et ses doctrines* (Paris, 1905-08); Maréchal, *Lamennais et Victor Hugo* (ib., 1906); id., *Lamennais et Lamartine* (ib., 1907); Christian Maréchal, *La jeunesse de La Mennais, contribution à l'étude des origines du romantisme religieux en France au 19^e siècle* (ib., 1913); id., *La famille de La Mennais sous l'ancien régime et la révolution* (ib., 1913), containing a bibliography.

LAMENTATIONS, BOOK OF. See JEREMIAH, LAMENTATIONS OF.

LA MESA, là mã'sa. A town in the Department of Cundinamarca, Colombia, situated on an affluent of the Magdalena, 30 miles west of Bogotá. It lies in a beautiful plain over 4000 feet above the sea, surrounded by coffee and sugar plantations, has a handsome town hall, and an active commerce in cacao, salt, grain, and hats. Pop., 1908, 5237.

LAMETH, là'mét', ALEXANDRE, COUNT DE (1760-1829). A French soldier and politician, brother of Charles Malo François Lameth. He was born in Paris. After serving as aid under Rochambeau during the American Revolution, he returned to France and in 1789 was deputy from Péronne to the States-General. He soon joined the Third Estate, however; aided in the overthrow of the noble and ecclesiastical privileges; and in 1790, as member of the National Assembly, advocated reforms and the abolition of privileges. He was a bitter personal and political enemy of Mirabeau. After the declaration of war with Austria (1792) he was made *maréchal de camp*, but his efforts to moderate the fury of the people were misunderstood, and, accused of treason by the Assembly, he was forced to flee with Lafayette. With the latter he was imprisoned by the Austrians from 1792 to 1795 and was not allowed to return to France until 1800. In 1810 he was made Baron by Napoleon. He held various prefectships under the Empire and later under the Restoration, and from 1819 to 1825 served as leader of the opposition in the Chamber of Deputies. In addition to numerous political and military articles, Lameth published a *Histoire de l'assemblée constituante* (2 vols., 1828-29).

LAMETH, CHARLES MALO FRANÇOIS, COUNT DE (1757-1832). A French general and politician, brother of the preceding. He assisted the American Colonies in their war for independence and while aid under Rochambeau at the battle of Yorktown was seriously wounded. In 1789 he was a member of the States-General. Elected to the National Assembly by the nobility (1791), he declared himself in favor of reforms, but his opposition to Mirabeau brought about his arrest in 1792. He escaped to Hamburg, where, joined by his brother Alexandre, he engaged in commerce (1795-97). Returning to France (1800), he lived in retirement until 1809, when he fought under Napoleon and served as Governor of Würzburg. He later joined the Bourbons, attained the rank of lieutenant general (1815), and was elected deputy in 1827.

LA METTRIE, là me-trè', JULIEN OFFRAY DE (1709-51). A French physician and materialist. He was born at Saint-Malo and, after

studying theology at several Jansenist schools, was educated in medicine at Paris, Rheims, and under Boerhave in Leyden, and in 1742 became physician to the Gardes Françaises. He fought at Dettingen and Fontenoy, but in 1746 was driven from France and then from Leyden on account of his materialistic *Histoire naturelle de l'âme*. He taught that psychical phenomena are due to organic changes in the brain, that the soul perishes with the body, and that true happiness is only gained through the senses. He was well received by Frederick the Great, by whom he was appointed court reader. He wrote *L'Homme machine* (1748), *L'Homme plante* (1748), and *Réflexions sur l'origine des animaux* (1750). His *Ouvrage de Pénélope ou le Machiavel en médecine* (1748) was a general attack on all the great scientists and physicians of his time.

LAMI, là'mé', LOUIS EUGÈNE (1800-90). A French historical and water-color painter, born in Paris. He studied with Gros and Horace Vernet. He was one of the artists selected by Louis Philippe to paint historical scenes for Versailles, which was then being transformed into a national museum, and many of his rather uninteresting works are still there. He taught painting in water colors to the princes and princesses of the Orléans family, was one of the founders of the French Society of Water Color Artists, and became an Officer of the Legion of Honor in 1863. Very attractive are his water-color illustrations for *Manon Lescaut*, *Gil Blas*, *Merimée's Charles IX*, and the *Works of Alfred de Musset*. He left interesting sketches of his extensive European travels. His "Interior of a Museum" is in the Metropolitan Museum, New York.

LA'MIA (Lat., from Gk. *Λαμια*). 1. In Greek mythology, the daughter of Poseidon and mother, by Zeus, of Herophile, the Delphic sibyl. 2. A beautiful Libyan queen whom Zeus loved. Hera in jealousy robbed her of her children. Lamia, in revenge, killed children whenever possible. Hence she was transformed into a hideous monster, who strangled and devoured young children. In the later development the Lamiae were vampires with the power of assuming attractive forms to allure victims, whose flesh they devoured. The Lamiae were used as nursery hobgoblins to terrify children and corresponded to the mediæval witches. This Lamia has been regarded as the feminine counterpart of Lamus, King of the Læstrygones (q.v.). Consult the article "Lamia," in Roscher, *Lexikon der griechischen und römischen Mythologie*, vol. ii (Leipzig, 1890-97). Keats wrote a poem, *Lamia* (1820), in which the bride is made to revert to her original serpent form. 3. A courtesan of Athens, originally a flute player. She acquired great influence over Demetrius Poliorcetes, into whose hands she fell at the battle of Salamis, and long maintained her power through her talents. She was noted for her great extravagance. Temples were dedicated to her under the name of Aphrodite at Athens and Thebes. 4. A town in ancient Thessaly, on the sea, near Othrys. See the next LAMIA; LAMIAN WAR.

LAMIA, or ZITUNI. The capital of the Nomarchy of Phthiotis, Greece, situated near the head of the Gulf of Lamia, 28 miles south of Phersala (Map: Balkan Peninsula, D 5). It is dominated by a mediæval fortress on the site of a more remote structure. Its chief

features are the mosque, bazars, and gardens. The rearing of camels is a distinctive industry. Pop., about 8000. Here, in 323 B.C., Antipater and his army were unsuccessfully besieged by the Athenians under Leosthenes, who was killed during an assault. To the south are the strategic Pass of Thermopylæ (q.v.) and the Bridge of Alamanna, where in 1821 young Diakos and the Bishop of Salona, commanding 700 Greeks, heroically opposed the advance of a Turkish army. The ancient name of Lamia has replaced the name of Zituni, by which it was known during the Turkish domination.

LAMIAN WAR. A war waged in 323 B.C. by the allied states of Greece against Antipater (q.v.). At first Antipater met with reverses and took refuge in the Thessalian town of Lamia, which gave its name to the war. There he was besieged by the Greeks for some months, but finally managed to escape, through the aid of Craterus (q.v.), thus ending the war and bringing the allies into subjection. Leosthenes, the Athenian commander of the Greeks, was killed during the siege.

LAMINA (Lat., thin plate). A thin layer or coat which may be laid over another; or a plate or scale, as a thin layer of minerals, bone, etc. In anatomy, a bone or part of a bone said to resemble a thin plate, as the cribriform plate of the ethmoid bone. In botany the broad thin petal of a flower, or what is called the blade of a leaf, is technically known as a lamina.

LAMINARIA (Neo-Lat., from Lat. *lamina*, thin plate). A genus of brown seaweeds of the family Laminariaceæ, or kelps. The species are widely distributed in the cooler waters of the globe, are common on rocky coasts, and attain a marked development upon the Pacific coast of America. They are marked by a cylindrical stalk of varying length, which expands above into a leaflike structure without a midrib. *Laminaria digitata* is the common tangle of the seacoasts. *Laminaria potatutum* is common in Australia; its hard stalk furnishes material for implements of various kinds. Other species, as *Laminaria bulbosa*, were formerly extensively used by glass and soap makers. *Laminaria saccharina* is a source of mannite. In Japan *Laminaria japonica* and *Laminaria angusta* are important articles of food. A number of species are important sources of iodine. They are also collected for the potash they contain, which make them and other kelps valuable for fertilizers. See PLATE OF HYDROPHYTES.

LAMINATION (from ML. *laminare*, to plate, from Lat. *lamina*, thin plate). The arrangement of sedimentary rocks, such as shales and sandstones, in thin layers or laminae. Lamination indicates interruption in the process of deposition, which may have been occasioned by successive tides, by periodical floods, or by change in the supply of material. Clay deposits frequently show a fine sprinkling of sand on the surface of the layers, which may be further distinguished by their varied colors. It seems probable also that laminated structure is sometimes produced in argillaceous rocks by the pressure of the overlying strata. See GEOLOGY.

LAMISTA, lâ-mě'stâ. A South American tribe. See YAMBO.

LAMIUM. A genus of plants of the mint family. See DEAD NETTLE.

LAMMASCH, lâm'ash, HEINRICH (1853-). An Austrian jurist, born in Seitenstetten, Lower Austria. He was educated at

the University of Vienna, became law lecturer there in 1878, and after teaching at Innsbruck (1885-89) returned to Vienna as professor of international and criminal law. In 1899 he became a member and Conservative leader of the Austrian Upper House and represented Austria in the first Hague Peace Conference. He became a member, and in 1911 president, of The Hague Tribunal and was one of the Venezuela arbitrators in 1903 and president of the boards that decided the Muscat case in 1905 and the Newfoundland fisheries case in 1910. Much of the Austrian penal code is due to him, as a young man he traveled in England and was impressed with English reformatory methods. He wrote: *Moment objektiver Gefährlichkeit im Begriffe des Verbrechensversuche* (1879); *Auslieferungspflicht und Asylrecht* (1884; trans. into French); *Duchstuhl und Beleidigung* (1893); *Grundriss des österreichischen Strafrechts* (1899; 4th ed., 1911); *Rechtskraft internationaler Schiedssprüche* (1913, published by the Nobel Institute); *Schiedsgerichtsbarkeit* (1914).

LAM'MAS DAY (AS. *hlammæsse*, *hläfmæsse*, loaf mass, bread feast, from *hläf*, Goth. *gahlaiba*, OHG. *hlaiba*, Ger. *Laib*, loaf + *mæsse*, OHG. *missa*, *messe*, Ger. *Messe*, mass, from ML. *missa*, mass, from Lat. *missa*, p.p. fem of *mittere*, to send). August 1. It is one of the cross-quarter days, or half-quarter days, in England. On this day, which is the feast of St. Peter ad Vincula, it was customary in early times to make offerings of the first fruits of the harvest.

LAMMENS, lâ'mîns', HENRI (1862-). A Belgian Orientalist. He was born in Ghent, entered the Society of Jesus, and became professor of Arabic literature in the Instituto Biblico at Rome and a great authority on Oriental history, on the geography of Syria, and on Mohammedanism. Among his works possibly the most important is *Fatima et les filles de Mahomet* (1912).

LAMMERGEIER, lâm'mër-gî'ër (Ger. *Lammergeier*, lambs' vulture, from *Lammer*, pl. of *Lamm*, OHG., Goth., AS, Eng. *lamb* + *Geier*, OHG. *gir*, vulture; connected with OHG. *ger-giri*, *grig*, Ger. *gierig*, greedy, Goth. *gairns*, desirous). The largest of European birds of prey (*Gypæctus barbatus*), measuring 40 inches or more in length and from 8 to 10 feet in extent of wing. Really an eagle and therefore one of the Falconidæ, it has won its name of "bearded" or "griffon" vulture from its frequent use of carrion as food, and it often resorts to the remains of vultures' feasts to gather up and devour the scattered bones. Its food ordinarily consists of small mammals and young lambs and chamois, in addition to carrion, but when driven by hunger, it has been known to attack sheep, goats, and even children. In north Africa, land tortoises form an important article of its diet, and it is reported to break open their shells by carrying the turtles high in the air and letting them fall upon rocks. Marrow bones are broken open in the same way. The stories of lammergeiers forcing chamois over precipices, and similar tales indicative of great sagacity and courage, appear to be exaggerated, but there seems little doubt that the birds do at times frighten living animals and force them to jump to their death. The fully plumaged bird is handsomely clothed, the back, wings, and tail being brownish black, the lower parts tawny, and the head white, with black marks on the

sides and tufts of black feathers at the mouth angles. The lammergeier ranges from the mountains of Spain and north Africa eastward through the Alps and mountains of Greece into Asia, as far as northern China. It is now rare in most parts of Europe and is destroyed whenever an opportunity offers. It is a bird of majestic flight, but has not the royal dignity of some of the eagles. The nest is made of sticks, in a crevice or on a shelf of a cliff, and usually only one egg is laid. This is dull yellow, clouded with rusty brown. See Plate of VULTURES.

LAMMERMUIR (lām'mēr-mōōr') **HILLS**. A range of low hills in Scotland, on the boundary between Haddington and Berwick shires, terminating in a precipitous coast on the North Sea (Map Scotland, F 4).

LAMMIE, ALFRED. In Dickens's *Our Mutual Friend*, a scheming character, flashy in appearance and manners, and fertile in plans for making money.

LAMNIDÆ (Neo-Lat. nom. pl., from Lat. *lamna*, *lamna*, thin plate). A family of sharks, represented by two well-defined groups, viz., Lamnæ or porbeagles, having lanceolate teeth, sigmoidally curved and not serrated, and Carcharodontes, having triangular serrated teeth. See PORBEAGLE, MAN-EATER SHARK.

LAMOIGNON DES MALESHERBES. See MALESHERBES, CHRÉTIEN GUILLAUME DE LAMOIGNON DE.

LAMÓN, la-mōn'. A landlocked bay of the Pacific Ocean on the east coast of the island of Luzon, Philippines (Map: Philippine Islands, D 3). It reduces Luzon to the narrow isthmus which here separates the southeastern peninsula from the main part of the island. Its width between Point Saley and Point Dapdap is 26 miles. Between these points lie the large island of Alabat and the smaller Calbalet, forming two channels which lead into a large and well-protected harbor, called Lopez Bay, hitherto little used. On the northwest shore are the two anchoring grounds of Port Lampón and Maubán, which are ports of call for steamers.

LAMOND, lām'ond, FREDERICK (1868-). An English pianist and composer, born at Glasgow. He received his first instruction on the piano and organ from his brother. In 1882 he entered the Raff Conservatory in Frankfort, where his teachers were Heermann (violin), Schwarz (piano), Urspruch (composition). The winter of 1884-85 he spent with Bülow and the following winter with Liszt. When he made his début in Berlin, in 1885, he was received with such marked favor that the German capital before long became his permanent residence. His subsequent tours of Austria, England, and Russia firmly established his reputation as one of the greatest interpreters of Beethoven and Brahms. His compositions include a symphony in A; an overture, *Aus dem schottischen Hochlande*; a piano trio; a sonata for cello and piano; piano pieces.

LAMONT, là-mōnt', DANIEL SCOTT (1851-1905). An American politician, journalist, and cabinet officer, born at Cortlandville, N. Y. He was educated at the State normal school at Cortland and at Union College, but left before graduation to engage in newspaper work on the *Argus* in Albany, where he became the friend of Grover Cleveland. He became well known as a political correspondent and held several legislative clerkships. From 1883 to 1889 he was private secretary to Mr. Cleveland during the

latter's two years as Governor of New York and during his first term as President, in which capacity he was remarkably popular. Thereafter for four years Lamont was engaged in various business enterprises in New York City, and when Cleveland was again elected to the presidency he was appointed Secretary of War. In 1897 he became vice president of the Northern Pacific Railway.

LAMONT, là-mōnt', JOHANN VON (1805-79). A German astronomer and physicist. He was born at Braemar in Aberdeenshire, of an old Scottish family, studied at Ratisbon and in 1828 became assistant in the observatory at Bogenhausen, near Munich. In 1835 he was made director of the same observatory, and in 1852 he became professor of astronomy in the University of Munich. His greatest work in astronomy was his minute observations of 34,674 lesser stars, published in the *Annalen der Sternwarte in München*. But he did more effective service in the study of terrestrial magnetism: he discovered the decennial period (1850) and the earth current (1862), made Bogenhausen a centre of meteorological research, and wrote *Handbuch des Erdmagnetismus* (1849), *Astronomie und Erdmagnetismus* (1851), and "Magnetismus," in Karsten's *Allgemeine Encyclopädie der Physik* (1863-64). He made magnetic surveys of Bavaria (1852), of France and Spain (1856), and of north Germany and Denmark (1858).

LA MONTE, ROBERT RIVES (1867-). An American Socialist, born in Brooklyn, N. Y. He studied at Rutgers College and at the University of Virginia and was admitted to the bar in Kansas and later in New Jersey. He took up journalism at Haverhill, Mass., in 1900, and became associate editor of the *International Socialist Review* and editor of the *Sunday Call*, New York, in 1909. He was a delegate to the Socialist National Convention at Rochester, N. Y., in 1900, and to the International Socialist Congress at Copenhagen, Denmark, in 1910, and served as a national organizer of the Socialist party in 1900 and 1911. He translated *The People's Marx* (1899) and Enrico Ferri's *Socialism and Modern Science* (1900) and is author of *Socialism, Positive and Negative* (1907) and *Men versus the Man* (1910).

LAMORICIÈRE, là-mô'rê-syâr', CHRISTOPHE LÉON LOUIS JUCHAULT DE (1806-65). A French general, born at Nantes. He studied at the Ecole Polytechnique and went to Algeria as a lieutenant of engineers in 1830. In 1833 he became chief of a battalion of Zouaves and in 1837 colonel. He particularly distinguished himself at the siege of Constantine. From 1841 to 1843 he was engaged in active warfare against the native tribes, defeating Abd-el-Kader in a sanguinary battle near Mascara (1842). In 1844 he took part in the battle of Isly and was made in 1845 interim Governor of Algeria. To him belongs the glory of concluding the war in Africa by forcing Abd-el-Kader to surrender in 1847. He had been elected to the Chamber of Deputies from the Department of the Sarthe the previous year and was reelected after his return from Algeria. In the Thiers ministry, which Louis Philippe called to office on Feb. 24, 1848, in a vain endeavor to avert his impending downfall, Lamoricière was made Minister of War. Upon the abdication of the King he sought to proclaim the Duchess of Orléans as Regent, but was caught in the fire of the bar-

ricades and narrowly escaped with his life when the Revolution broke out. He commanded the attack on the barricades during the June insurrection and suppressed the uprisings of the Socialists. He was Minister of War during the government of General Cavaignac and in 1849 was sent by Odilon Barrot on an important diplomatic mission to Russia. He attached himself to the Republican party in the Legislative Chamber after his return, being a very decided opponent of the schemes of Louis Napoleon. He was arrested on the occasion of the coup d'état of Dec. 2, 1851, and was at first imprisoned in Ham and afterward exiled, not being allowed to return until 1857. During his exile, which he spent in Germany, Belgium, and England, he became a devout Catholic and in 1860 was appointed by Pius IX commander of the papal troops. He organized an army of young Catholic devotees for the purpose of defending the holy see from the hateful progress of "revolution," and indirectly to restore the temporal power to the Pope. He was, however, compelled to surrender his whole force to the Sardinian general Cialdini at Ancona, after having been defeated at Castelfidardo, Sept. 18, 1860. He returned to France and died near Amiens, Sept. 11, 1865. Consult: E. Keller, *Le général Lamoricière* (Paris, 1891); Rastoul, *Le général Lamoricière* (ib., 1894); Flornon, *Lamoricière* (ib., 1903).

LAMORMAINI, lă'môr-mî'nê, WILHELM GERMAIN (1570-1648). An Austrian Jesuit, born at La Moire Mennie, a village near Luxemburg. He joined the Jesuits in 1590 at Brünn. In 1596 he was ordained priest, in 1623 he became rector of the Vienna College, and next year he was made confessor to the Emperor Ferdinand II. He published *Ferdinandi II Virtutes* (1637), which appeared in the following year under the title of *Idea Principis Christiani*. His correspondence with Emperor Ferdinand and his family was published by Dudik (1876).

LA MORRA. A game played by the ancient Romans and the modern Italians. It calls for two players. These stand opposite each other, holding their closed right hands before them. Each then flings out his right hand, with one or more fingers open (the other fingers are shut up in the palm); at the same time he calls out a number, hoping that this number will give correctly the total of fingers displayed by his adversary and himself combined. If both players strike the right total, or if neither strikes it, no point is scored; if only one player cries out the total correctly, he scores a point. Five points, or less often 10 points, constitute a game. Each player marks his score on his left hand, which he keeps rigidly upright, level with his shoulder, with one finger extended for each point of his score. The modern Italians are passionately devoted to the game and play it for stakes of wine, money, etc. At first the arm is raised above the head and brought sharply down, the fingers opening as the arm descends; as the players warm to their work, however, they keep their right hands opposite their breasts and open and close their fingers with speed that only the expert eye can follow. The Romans called the game, from the sudden opening of the fingers, *micare digitis* (to flash with the fingers). Since one can cheat easily at the game, by holding a finger, especially the thumb, only half extended, to open or close it later as will suit his purpose, or by lying about the position of the

finger, the Romans, in seeking to describe a man as exceptionally honest, declared that one could "flash fingers with him in the dark." Consult W. W. Story, *Roba di Roma* (8th ed., Boston, 1887).

LA MOTTE, là môt, ANTOINE HOUDAR DE (1672-1731). A French author and critic, born in Paris. His first work, a comedy, *Les originaux* (1693), was a failure; but he continued to produce operas, ballets, and tragedies, one of which, *Inès de Castro* (1723), was successful for many years. He was admitted to the Academy in 1710 and two years afterward became blind. His *Réflexions sur la critique* (1715) has some value. One edition of his works appeared in 1754, *Œuvres choisies* in 1811, *Œuvres de théâtre* in 1730, and *Lettres* in 1754. He was a champion of the moderns in the controversy of the ancients and the moderns.

LA MOTTE FOUQUÉ, là môt' fōō'kâ', FRIEDRICH HEINRICH KARL, BARON DE (1777-1843). A German Romantic novelist and poet, best known as the author of *Undine*, a classic of romanticism. He was born in Brandenburg, served in the Prussian army from 1794 to 1803 and in 1813, and spent the rest of his life chiefly on his estate in Nennhausen and at Halle, where from 1831 to 1842 he lectured on modern history and poetry, attacking modern tendencies. He died in Berlin. At first he imitated Spanish poets, and then Norse legend and Old German poetry attracted him. In 1808 he published *Sigurd der Schlagentoter*, the first of three poetic dramas based on the *Nibelungen*sage. In 1811 came the beautiful fairy tale *Undine*, followed by the very popular romance of chivalry *Der Zauberring* (1813), *Sintram und seine Gefährten* (1814), *Die Fahrten Thiodolfs des Isländers* (1815), which Fouqué regarded as his best work, the historical epic *Bertrand du Guesclin* (1821), and several volumes of poems. In 1840 he published an autobiography. His numerous later writings added nothing to his reputation. His selected works (12 vols., 1841) contain little of import save what has been translated into English—*The Enchanted Ring*, *Sintram*, *Aslauga's Knight*, and the exquisite *Undine*. A passionate medievalist, he fought bitterly and vainly against the new ideals in life and literature. Consult "Biographical Notice of La Motte Fouqué," in Thomas Carlyle, *German Romance*, vol. i (London, 1841), and K. Wenger, *Historische Romane deutsche Romantiker* (Bern, 1905).

LA MOTTE-GUYON. See GUYON, JEANNE MARIE BOUVIER DE LA MOTTE.

LA MOTTE-VALOIS, vâ'lwâ', JEANNE DE LUZ DE SAINT-RÉMY, COMTESSE DE (1756-91). A French adventuress. See DIAMOND NECKLACE, THE AFFAIR OF THE

LAMOUREUX, lâ'mōō'rê', CHARLES (1834-99). A French violinist and conductor, born in Bordeaux. He studied at the Paris Conservatory and won the first prize for violin in 1854. He afterward played first violin at the Opéra and founded a society for chamber music. In 1873 he organized the Société de l'Harmonie Sacrée, which in 1875 gave the first performance of the *Messiah* in Paris. In 1876 he became assistant conductor and in 1878 first conductor at the Opéra. In 1880 he was made a Knight of the Legion of Honor. His inauguration of the *Nouveaux Concerts* in 1881 (later better known as the *Concerts Lamoureux*) was a continuation of the work begun by Colonne. Many new com-

posers, particularly Wagner, had their first hearing in France at these concerts. He produced the operas *Lohengrin* and *Tristan und Isolde* for the first time in Paris and proved himself a good interpreter of German music. He died in Paris. After his death his son-in-law Chevillard (q.v.) continued the *Concerts Lamoureux*, which still are among the most important musical events of Paris.

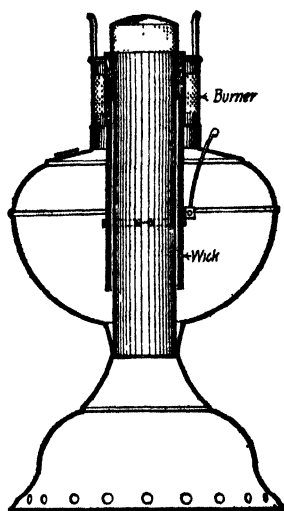
LAMP (from Fr. *lampe*, Lat. *lampas*, Gk. *λαμπάς*, *lampas*, torch, from *λάμπειν*, *lambain*, to shine). Any artificial light source, but especially a single movable unit. The earliest and most primitive lamps were burning brands plucked from the camp fire, and coals nursed into flame in a brazier. Then came torches of resinous wood, often consisting of several twigs or splinters bound fast together and saturated with fat or oil. A little later was discovered the art of making candles. When the top of the candlewick is lighted, the flame melts the wax or tallow nearest and, heating it until it bursts into flame, develops a much more powerful light than the wick alone could give. About the same time came flat open vessels of stone, clay, bone, or shell (sometimes the skulls of animals) burning fat; and later shallow lamps of stone or clay or metal containing oil in a covered reservoir, from which it is drawn by capillary attraction through a small hole to the tip of an ignited wick. Such lamps were called *lychna* by the Greeks and *lucernæ* by the Romans and have been found in great numbers in the ruins of Greek and Roman cities, especially from the excavations of Tarsus, Pompeii, and Herculaneum. The principle in all is the same. At first the *lucernæ* were made of unglazed pottery and with only one wick hole, but better material and more elaborate forms succeeded, and the light-giving power was increased by increasing the number of outlets and wicks. The wicks were generally made of flax tow; less often of rushes and other vegetable fibres.

Among the northern tribes, especially those living in the region of perpetual snow, the lack of olive and other vegetable oils made the use of fat compulsory, except on the sea, where seal and whale oil were plentiful. Small open stone pots, afterward superseded by metal, were partly filled with grease, and a wick was thrust down through the middle, which, being lighted, consumed the fat as it melted. Stone cups of this kind are occasionally dug up in Scotland and other parts of Europe; in principle they are the same as the *padelle*, used in Italian illuminations, and the old grease pots which once formed the footlights of theatres. The Eskimo shape square boxes of soapstone and use them in the same way.

No great improvement in the efficiency of lamps took place until near the end of the eighteenth century, when the ancient small round wicks were replaced by large flat woven ones that were inclosed between the flame and the oil in a metal casing and were adjusted by a spur wheel that forced them up or down, thus regulating the flame easily and quickly and promoting better combustion. The Swiss chemist Argand (q.v.) substituted for the flat wick a tubular one between two metal cylinders, the inner of which extended down through the base of the oil reservoir and thus provided internal draft. But the epoch-making discovery that transformed the whole method of oil lighting and, as regards the art of illumination, pushed

the world forward thousands of years was accidental. One of Argand's workmen, in heating a bottle over the open flame, cracked off the bottom and held the remainder over the flame so that it acted like a chimney. He had sense enough to notice that the flame at once burned more brilliantly and more steadily. This accidental discovery of the *glass lamp chimney* remained unparalleled in importance in the field of artificial illumination until the recent discovery and development of the electric lamp.

Soon after the middle of the nineteenth century, as a result of the development of oil wells in the United States (see *PETROLEUM*), kerosene began to take the place of whale, lard, olive, and other oils, until now the improved kerosene lamp is used throughout the world by semi-civilized as well as civilized nations. The lamps that came over with the Pilgrims on the *Mayflower* were Dutch and went by the name of "Betty lamps." They are of iron, some forged and some cast, and also of brass. They are shaped like a pear, but flat on top and bottom. The earliest form was known as the "open Betty," or slot lamp. This was succeeded by the Betty with a hinged lid. The wick support was a small half-round metal bar fastened at the lower end to the inside bottom of the lamp. There was a handle at the back, attached by a link to a pointed hook that held the lamp suspended from the high back of a chair, or from a crevice between the great stones framing the fireplace. All lamps used in New England were imported until 1680, when a tin-mith of Newburyport, Mass., began the manufacture of "Newburyport Bettys." An early maker of pewter lamps and candlesticks was Richard Graves, of Salem, Mass. Another was Henry Shrimpton, of Boston, whose work is distinguished for



LAMP

Section of Rochester lamp, showing central-draft burner.

beauty and artistic perfection. Americans who helped to improve the lamp were Benjamin Franklin and Benjamin Thompson, better known as Count Rumford. A modification of the central-draft burner is the *student lamp*, in which the oil reservoir is above the burner, 5 or 6 inches away, and connected with it by a tube, through which the flow of oil under gravity

pressure is automatically so regulated that only as much reaches the wick as is needed for consumption. These lamps give out less heat than the ordinary central-draft burner. For electric and gas lamps and the art and science of illumination, see **ELECTRIC LIGHTING**, **LIGHTHOUSE**; **SAFETY LAMP**; **GAS**, **ILLUMINATING**, **ETC.**, **BURNERS**

Bibliography. Count Rumford, *Management of Light in Illumination* (London, 1812); H. C. Bolton, *Legends of Sepulchral and Perpetual Lamps* (ib., 1879); A. M. A. Héron de Villefosse, "Lampe romaine avec légende explicative," in *Paris Institut, Académie des Inscriptions et Belles-Lettres, Monuments et Mémoires*, vol. ii (Paris, 1895); William Hough, *Lamps of the Esquimo* (Washington, 1896); C. A. Q. Norton, "Light and Lamps of Early New England," in the *Connecticut Magazine* (Hartford, 1903-04). Anon., *Comment discerner les styles enseigné par l'image: Le luminaire transformations progressives du 1er au 19e siècle* (Paris, 1906); Waldemar Deonna, "Les lampes antiques trouvées à Délas," in *Bulletin de Correspondance Hellénique*, vol. xxxii (ib., 1908); A. H. Sayce, "Origin of the Greek Lamp," in *Hilprecht Anniversary Volume* (Leipzig, 1909); H. B. Walters, compiler, *Catalogue of Greek and Roman Lamps in the British Museum* (London, 1914). See **ELECTRIC LIGHTING**; **PETROLEUM**.

LAMPADOPHORIA (Lat., from Gk λαμπαδόφορῖα, a bearing of torches, from λάμπα, *lampas*, a torch, and φέρειν, *pherein*, to carry). A torch race, such as was held in many places in the Greek world in honor of various divinities. At Athens we know of important torch races in honor of Prometheus, Hephaestus, Athena, Pan, and Artemis Bendis, a Thracian goddess. The latter was held in the Piræus, and the contestants were mounted. The race seems to have originated in honor of Prometheus (q.v.) and his gift of fire to mankind. At the festival of Prometheus the course was from his altar at the Academy (q.v.) to the Dipylon Gate (q.v.). At other festivals the start was at the altar of Eros, in the same neighborhood, but the goal is not certain. Two kinds of torch race on foot seem to be described. One was a sort of relay race, where the torches were passed from one runner to another, and the band whose lighted torch first reached the goal was the victor. The other was a race between individuals, each of whom strove to bring his lighted torch to the goal. If the torch was extinguished, the runner was disqualified. The torches seem to have been of wax and were provided with a handle and shield to protect the hand. The torch races were held at night. In some races the runners carried also shields on the left arm, as in the race in armor. The race was regarded as a severe test requiring careful training. In addition to the handbooks and dictionaries of classical antiquities, consult the careful study by Sterrett, in *American Journal of Philology*, vol. xxii (Baltimore, 1901), and Gardiner, *Greek Athletic Sports and Festivals*, especially pp. 292-293 (London, 1910).

LAMPAS. The name commonly given to a swelling of the mucous membrane covering the hard palate and projecting in a more or less prominent ridge immediately behind the horse's upper incisor teeth. This swelling is entirely natural and occurs in every healthy horse. It is usually seen in young horses during the period of shedding the teeth. As a direct treatment slight

scarification is the most that will be required. The remedy in common use is to apply an astringent wash of alum water. The practice of burning the lampas is very severely condemned.

LAMPASAS, lām-pās'as. A town and the county seat of Lampasas Co., Tex., 60 miles (direct) north by west of Austin, on a branch of the Lampasas River and on the Gulf, Colorado, and Santa Fe Railroad and the terminus of a branch of the Houston and Texas Central (Map: Texas, C 4). It has a considerable trade in cotton, grain, wool, hides, agricultural produce, live stock, pecans, poultry, and eggs, and its industries are represented by cotton gins, flour mills, wagon shops, etc. Sulphur springs have given the locality considerable popularity as a health resort, and the town contains a public library and two large parks. The water works are owned by the municipality. Pop., 1900, 2107; 1910, 2119.

LAMPBLACK. Soot, produced on a commercial scale by the imperfect combustion of various materials, such as coal tar or wood tar, pitch, petroleum, rosin, etc. These substances are burned in a fireplace, the dense smoke passing through a long brickwork flue into the chambers where the soot collects. The finest quality of lampblack is deposited in the last of these chambers. This portion of the soot may be used directly for making printers' ink and for similar purposes, but to render it fit for making water colors the lampblack must be subjected to a process of purification. This may be effected by digesting the soot with hot sulphuric acid, then washing with water. According to the German method, the cooled soot is deposited on woolen cloths hung in the condensing chambers. By shaking or beating the fabric the pigment is easily detached.

LAMP'ER EEL, or **LAMP'ERN**. See **LAMPREY**.

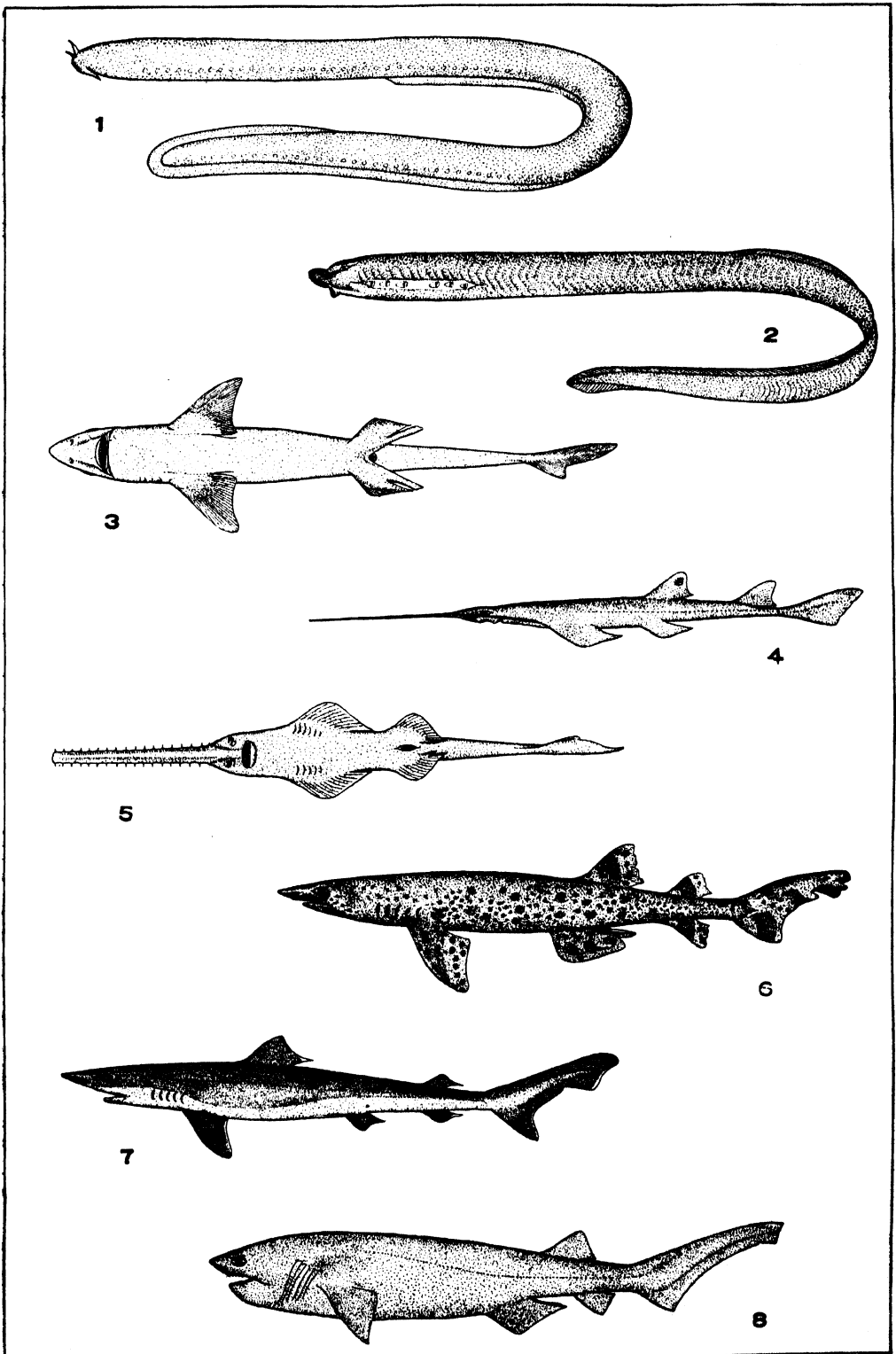
LAMPERTI, lām-për'tà, FRANCESCO (1813-92). A famous Italian singing master, born at Savona. He studied piano and harmony at the conservatory in Milan. While director of the theatre at Lodi, he made a practice of cultivating any fine natural voices that he chanced to find and engaging them for his theatre. In this way he trained an astonishing number of singers who rose to great prominence and carried their teacher's name far beyond the limits of Italy. In 1850 he was appointed professor of singing at the Milan Conservatory, where he remained for 25 years. He resigned in 1875 and until his death devoted all his time to private pupils, who flocked to him from all parts of the world. The essentials of his method he embodied in a treatise, which was published in an English translation by J. C. Griffith under the title *A Treatise on the Art of Singing* (1876). Among his most famous pupils were Campanini, Mariani, Galli, Angeleri, Cruvelli, Albani, Sembrich, Artôt.

LAMPETER (lām'pè-tēr) **BRETHREN.** See **AGAPEMONE**.

LAMPLIGHTER, THE. A novel by Maria Susanna Cummins (1854).

LAMP'MAN, ARCHIBALD (1861-99). A Canadian poet, born at Morpeth, Ontario, Nov. 17, 1861. He was descended from a German family of Loyalists who emigrated from Pennsylvania at the outbreak of the Revolution. After graduating from Trinity College, Toronto 1882, he taught school for a few months and then entered the government post office at Ot-

LAMPREYS AND DOGFISH



1. HAGFISH or SLIME EEL (*Myxine glutinosa*).
2. RIVER LAMPREY (*Entosphenus tridentatus*).
3. COMMON DOGFISH (*Squalus acanthias*).
4. SAWFISH (*Pristis pectinatus*).

5. SAWFISH (under side).
6. CALIFORNIA SWELL SHARK (*Catullus uter*).
7. OIL SHARK or TOPE (*Galeorhinus zyopterus*).
8. GREAT COW SHARK (*Hexarchus griseus*).

tawa. His published volumes comprise *Among the Millet, and Other Poems* (1888) and *Lyrics of Earth* (1895). Lampman died at Ottawa, Feb. 10, 1899. Consult the *Poems*, edited with a memoir by D. C. Scott (Toronto, 1900).

LAMPONG, lām-pōng'. A Malay people of somewhat mixed blood, inhabiting southern Sumatra. The Lampong have developed in a high form the Malayan village system and are otherwise noteworthy from a sociological point of view. They are said to be very faithful in marriage.

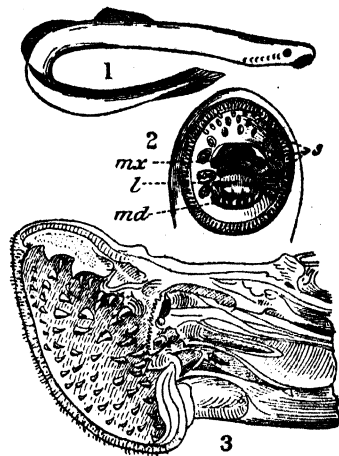
LAMPOON' (Fr. *lampon*, from *lampons*, first person pl. of *lamper*, to drink, from OF. *lapper*, *laper*, from AS. *lapan*, Eng. *lap*; connected with Icel. *lepja*, OHG. *laffan*, Lat. *lambere*, to lick, connected with Lat. *labium*, Pers. *lab*, lip). A term applied to any stinging satire written with a direct purpose to vex, reproach, or abuse particular individuals, as distinguished from satire directed against vice and folly. Its use probably arose from a tendency of drinking songs to give a free rein to personal abuse or satire.

LAMPRECHT, lām'prekt, KARL (1856-1915). A German historian, born at Jessen and educated at Göttingen, Leipzig, and Munich. In 1885 he was appointed professor at Bonn, in 1890 at Marburg, and in 1891 at Leipzig. During 1910-11 he was rector of the University of Leipzig. He received honorary degrees from Columbia, the University of Christiania, and St. Andrews. His works include: *Beiträge zur Geschichte des französischen Wirtschaftslebens im elften Jahrhundert* (1878); *Deutsches Wirtschaftsleben im Mittelalter* (1886); *Die römische Frage von König Pipin bis auf Kaiser Ludwig den Frommen* (1889); *Die kulturhistorische Methode* (1900); and, after a visit to the United States, *What is History?* (1905) and *Americana* (1906). He founded in 1882 *Die westdeutsche Zeitschrift für Geschichte und Kunst* and after 1904 was in charge of Heeren and Ukert's *Allgemeine Staatengeschichte*. By all means his most famous work is his *Deutsche Geschichte* (13 vols., 1891-1908), which made him the chief exponent of the so-called *Kulturgeschichte*. In opposition to the orthodox political historians, of the type of Ranke, Lamprecht believes that the historian's chief task is to trace the unfolding of what he calls the "social soul," and that the modern science of history is primarily social-psychological and not exclusively political. Although his *History of Germany* is epoch-making, it has excited great opposition among other historians, and the extent of the Lamprecht literature is immense. His chief exponent has been Dietrich Schäfer. Although his work is deficient on the personal, ecclesiastical, and political sides, he is probably the most famous German historian of his time. The University of Leipzig established for him an Historical Institute, with facilities unrivaled in Europe. Consult Gooch, *History and Historians of the Nineteenth Century* (London, 1913).

LAMPRECHT THE PRIEST. A Frankish poet. Little is known of his life. He is the author of a Middle Frankish epic known as the *Alexanderlied*, a life of Alexander the Great, made up of every incident, legendary or historical, that he could collect. In it Alexander relates many strange adventures. It was written about 1130 and is based on a French original by Aubry de Besançon and a Latin prose version. The *Alexanderlied* was published by Diemer, Massmann, and by Weismann (with a

translation, in 1850, Frankfort-on-the-Main). There is also a modern High German version by Ottmann in Hendl's *Bibliothek der Gesamtlitteratur* (Halle, 1898).

LAMPREY (OF., Fr. *lamproie*, It. *lampreda*, from ML. *lampreda*, *lampetra*, lamprey, from Lat. *lambere*, to lick + *petra*, rock; in allusion to the fish's habit of attaching itself to rocks by its suckorial mouth). An eellike animal of the family Petromyzontidæ, of the class Cyclostomata or round-mouth eels. Lampreys, or lamperns, are characterized by the possession of a circular mouth formed for sucking instead of true jaws. They are eel-shaped and have no scales. There are seven roundish gill orifices on each side, through which the water is expelled, thus effecting respiration. They attach themselves to stones and other objects by their sucker mouths, and also to fishes, from which they scrape the flesh by their rasping teeth. They will also eat other small animals or even dead matter. There are 7 genera and about 15 species. Lampreys generally ascend rivers or brooks at the spawning season, and afterward many of the individuals die. The lampreys undergo a metamorphosis, the young differing from the adult in the rudimentary eyes, absence of teeth, larger brain, and other structural characters. These larval forms have been described as different genera. No undoubted fossil remains of lampreys are known; they have no hard structures except the "teeth" to be preserved. The common marine or "great-sea" lamprey (*Petromyzon marinus*) occurs in both Europe and America and attains a length



THE GREAT SEA LAMPREY.

1. Outline of the animal. 2. Sucking mouth; s, suckorial buccal teeth; mx, maxillary tooth; l, lingual tooth; md, mandibular tooth. 3. Longitudinal section of mouth and throat.

of 3 feet. The small lamprey common in the lakes and streams of the Mississippi valley is *Ichthyomyzon concolor*. Another species, common in Europe, is *Lampetra fluviatilis*. The lampreys are highly regarded as food by some people. For an extended description of their structure and habits, consult Goode, *Fishery Industries*, sec. i (Washington, 1884). See Plate of LAMPREYS AND DOGFISH.

LAMPRIDIIUS, ÆLIUS. A Latin historian and biographer, who lived in the reigns of Dio-

cletian and Constantine the Great. He was one of the writers of the *Scriptores Historia Augustæ* (see AUGUSTAN HISTORY), in which his name is prefixed to the lives of Commodus, Antoninus, Diadumenianus, Elagabalus, and Alexander Severus. According to some authorities, he also contributed the biographies of Marcus Aurelius, Lucius Verus, Pertinax, Albinus, and Macrinus. Consult Peter's text of the *Scriptores Historia Augustæ* (Leipzig, 1884) and the English translation by Bernard (London, 1740); also Schanz, *Geschichte der römischen Litteratur*, vol. iv (2d ed., Munich, 1914).

LAMP'SACUS (Lat., from Gk Λάψακος, *Lampsakos*) (the modern Lapsaki). An ancient city of Mysia, situated on the Hellespont, where it begins to widen into the Propontis. It was settled by colonists from Phocæa and Miletus and passed from the Persian domination to Athens after the battle of Mycale (479 B.C.). It was a flourishing city in later Greek times and under the Romans and was celebrated as the centre of the worship of Priapus (q.v.).

— **LAMP SHELL**. A brachiopod. See BRACHIOPODA.

LAMPYRIDÆ. See FIREFLY.

LAMSDORF, läms'dorf (or LAMBSDORF), VLADIMIR NIKOLAEVITCH, COUNT (1837-1907). A Russian statesman, of an old noble family. Educated at the Alexander Lyceum in St Petersburg (Petrograd), upon graduation he entered the Ministry of Foreign Affairs. While Count Muraviev was head of this department, Lamsdorf was Assistant Minister, and he was appointed Minister upon Muraviev's death in 1900. In this office he took an active part in drawing up the Peking Treaty of 1900, by which China had to pay the expenses incurred in the suppression of the Boxer Rebellion, and which regulated the commercial relations of the two countries. Later he endeavored to prevent war between Russia and Japan—all through 1903 he was carrying on diplomatic negotiations with Japan in an effort to settle the Manchurian question, but with no success. When, Oct. 25, 1904, the Russian fleet fired by mistake on the British fishing fleet off the Dogger Bank, Lamsdorf was instrumental in securing a peaceful settlement of the affair. He resigned in 1906.

LAMSON-SCRIBNER, FRANK. See SCRIBNER, FRANK LAMSON.

LA'MUS. See LÆSTRYGONES; LAMIA. 2.

LAMUTS, lä'muts. A people of Tungus stock, who dwell on the shores of the Sea of Okhotsk, in part of northern Kamchatka and the country to the west. They are the maritime division of the Tungus. The Lamuts came into contact with the Russians in the seventeenth century, and their village life has been much affected. Consult Hieckisch, *Die Tungusen* (St. Petersburg, 1872); Müller, *Unter Tungusen und Jakuten* (Leipzig, 1882); Olsufjev, "Der Anadyr-Bezirk," in *Petermanns Mitteilungen* for 1899 (Gotha); Bogoras, "The Chukchi of Northeastern Asia," in the *American Anthropologist* (New York, 1901).

LAMY, lä'mé', BERNARD (1640-1715). A French oratorian. He was born in Le Mans, entered the Oratory in Paris (1658), became professor of philosophy in Saumur (1671), was deposed for advocating the Cartesian philosophy (1675), and removed to Grenoble, where he taught in the seminary till 1686. Later he taught in Paris. Having fallen into difficulties because

he had ventured to publish a book without proper permission, he removed to Rouen (1690) and there died Jan. 29, 1715. His fame rests upon several valuable publications: *L'Art de parler* (1675); *Apparatus ad Biblia Sacra* (1686; Fr. trans., 1697, 1709. Eng. trans., London, 1723); a Gospel harmony (1689), *Traité historique de l'ancienne Pâque des Juifs* and its sequel (1693), a very elaborate 30 years' study, *De Tabernaculo Fœderis, de Sancta Civitate Jerusalem et de Templo* (1720, with life by Deswold).

LAMY, ETIENNE MARIE VICTOR (1845-). A French author, born in Cize, Jura. He was educated at the Collège Stanislas and became a doctor of law in 1870. From 1871 to 1881 he was a deputy from his native department, Jura, and his earlier writings were political and historical. In the House of Deputies he was a member of the Left, but he broke with his party and became a clerical reactionary, writing for the *Gaulois* and the *Correspondant*. In 1905 he became a member of the Academy, and in 1913 he succeeded Thureau-Dangin as its perpetual secretary. Among Lamy's works are *Le tiers parti* (1868), *L'Irinée et la démocratie* (1889), *La France du Levant* (1898), *Etudes sur le second empire* (1895), *La femme de demain* (1899), an edition of the memoirs of Aimée de Coigny (1900), *Témoins de jours passés* (1909, 1913), *Au service des idées et des lettres* (1909), *Quelques œuvres et quelques ouvriers* (1910, 1913).

LANAI. See HAWAIIAN ISLANDS.

LAN'ARK. The county town of Lanarkshire, Scotland, a royal, municipal, and police burgh on the Clyde, 32 miles southeast of Glasgow (Map Scotland, E 4). It manufactures nails, oil, cotton goods, textiles, and shoes. It has Roman and feudal remains. Here, in 978, Kenneth II assembled a parliament, and in a niche of the church is a colossal statue of Wallace, of whose early exploits Lanark was the scene. Pop., 1901, 6440, 1911, 5900. The Falls of the Clyde are near the town, and a mile to the south lies the manufacturing village of New Lanark (pop., 973), celebrated as the scene of Robert Owen's experiment (1815-27) for the improvement of the working classes.

LAN'ARKSHIRE. An inland county of the southwest division of Scotland and the most populous in the country. Area, 897 square miles (Map Scotland, E 4). Pop., 1801, 147,700, 1901, 1,339,327, 1911, 1,447,034. The surface is exceedingly varied, being low in the northwest and rising to the southeast and south. The principal hills are the Lowthers, which attain a maximum altitude of 2403 feet in Green Hill. Though the county is watered by the Clyde (q.v.) and its affluents, much of the soil is marshy and barren. The northern part is the chief mining region of the county, producing iron, coal, and lead. Iron ore is smelted at Glasgow and many other towns, and the cotton, flax, and woolen manufactures, carried on in and around Glasgow, are the most important sources of wealth in the county. There are large shipbuilding and engineering works along the Clyde. Agricultural pursuits include stock raising for dairy purposes, fruit raising, and market gardening. Capital, Lanark. Lanarkshire at an early period was inhabited by the Damnonii, a Celtic tribe. In the seventh century a large district, including Lanarkshire, was subdued by the Saxons of Northumbria.

LANAUTTE, ALEXANDRE MAUBICE BLANC DE. See HAUTERIVE, COUNT D'.

LANCASHIRE, lāp'kà-shēr. A maritime county of northwest England, bounded north by Cumberland and Westmoreland, east by Yorkshire, south by Cheshire, and west by the Irish Sea (Map: England, D 3). Area, 1869.1 square miles. Pop., 1901, 4,378,293, 1911, 4,825,739. The north and east portions are hilly, and the west, towards the coast, level. The chief rivers are the Mersey, Ribble, Wyre, Hodder, Calder, and Leven. Wheat, oats, and potatoes are generally cultivated, but Lancashire is chiefly a mining and manufacturing county. Coal and iron abound, and lead and copper are also mined. South Lancashire is noted for the manufacture of cotton, the production of worsteds, woolens, silk, machinery, glass, and soap, and shipbuilding, are extensively carried on in Liverpool, Manchester, Preston, and Blackburn. Capital, Lancaster. In early British days the region now known as Lancashire was peopled by the Brigantes and Voluntii. After the Conquest part of it became first the Earldom and then the Duchy of Lancaster. Since the reign of Edward IV it has been a crown duchy and palatinate.

LANCASTER, lāp'kàs-tēr. The capital of Lancashire, England, on the Lune, near its mouth, 45 miles northeast of Liverpool (Map: England, D 2). The most interesting building is the fifteenth-century church of St. Mary. It manufactures cotton and silk goods, cabinetwork, coco matting, machinery, pottery, and leather. The harbor has 1700 feet of quays and a depth of 12 feet at spring tides. There is some trade in coal and limestone. The port includes Glasson Dock, 5 miles southwest. The town is neat and well built. It has an ancient castle of Roman and Saxon origin and a fine aqueduct, which carries the Lancaster Canal across the river. It owns its gas, water, and electric lighting plants, baths, slaughterhouses, markets, public parks, art gallery, free library, grammar schools, and schools of technical education. The first of its many charters was granted by King John in 1193. Pop., 1901, 40,329, 1911, 41,410.

LANCASTER. A town, including several villages, in Worcester Co., Mass., 20 miles by rail north by east of Worcester, on the Nashua River, and on the Boston and Maine Railroad (Map: Massachusetts, D 3). It has the State Industrial School for Girls, the Thayer Museum of North American Birds, and a large public library. Though Lancaster is primarily a place of residence and small farming interests, it contains a yarn factory. There are municipally owned water works. Pop., 1900, 2478; 1910, 2464. Lancaster, settled about 1643, by John Prescott, an ancestor of the historian, was incorporated as a town two years later. In 1676 Indians massacred 40 of its citizens and laid the place in ruins. Consult: A. P. Marvin, *History of the Town of Lancaster* (Lancaster, 1879); H. S. Nourse (ed.), *The Early Records of Lancaster* (ib., 1884); id., *Military Annals of Lancaster* (ib., 1889); Emerson, *Lancaster on the Nashua* (Leominster, Mass., 1904).

LANCASTER. A town and the county seat of Coos Co., N. H., 137 miles north of Concord, on the Israel River, and on the Boston and Maine and the Maine Central railroads (Map: New Hampshire, G 3). It is a popular residential place and summer resort, attractively situated among the White Mountains, and has the

Helen Fowler Weeks Home and a public library. It is also the commercial centre for the neighboring White Mountain resorts and manufactures lumber, woodwork, machinery, belt hooks, drugs, etc. Lancaster was settled in 1764. Pop., 1900, 3190; 1910, 3054.

LANCASTER. A village in Erie Co., N. Y., 10 miles east of Buffalo, on the Lackawanna, the Erie, the New York Central, and the Lehigh Valley railroads (Map: New York, B 5). It is of considerable importance as a manufacturing centre, having iron and brass foundries and machine shops, malleable-iron works, knife factory, glassworks, flouring mills, steel plants, railway shops of the New York Central, brick-yards, and other industries. There are two fine high-school buildings and a public library. The town was settled in 1813. Lancaster owns its water works. Pop., 1900, 3750, 1910, 4364.

LANCASTER. A city and the county seat of Fairfield Co., Ohio, 32 miles by rail southeast of Columbus, on the Hocking River, and on the Hocking Valley and the Pennsylvania Company railroads (Map: Ohio, E 6). It has the State industrial school for boys and a fine courthouse and city hall. The city is in a rich agricultural region and in the natural-gas belt; its manufactures include agricultural implements, foundry products, stoves, paper, automobile tires, wood-pulp machines, lenses, carbon pyrometers, gloves, flour, shoes, and glass. The facilities for shipping by rail have made Lancaster an important trade and produce centre. The government is administered under the municipal code of 1902 by a mayor, council, auditor, and treasurer, elected biennially, and by directors of public service, public safety, and public health, appointed by the mayor and council. There are municipal water works and gas plant. Settled in 1800, Lancaster was first incorporated in 1831. It was the birthplace of Gen. W. T. Sherman and Senator Sherman. Pop., 1900, 8991, 1910, 13,093; 1914 (U. S. est.), 14,840.

LANCASTER. A city and the county seat of Lancaster Co., Pa., on the Conestoga River, 69 miles west of Philadelphia, on the Pennsylvania, the Philadelphia and Reading, and the Lancaster, Oxford, and Southern railroads (Map: Pennsylvania, J 7). It is the seat of Franklin and Marshall College (q.v.), with the Theological Seminary of the Reformed Church in the United States, and has the Lancaster General Hospital, St. Joseph's Hospital, the Children's and Stevens homes, the Long Home for Aged Women, Stevens Industrial Trade School, A. Herr Smith Library, Ann C. Witmer Home, and the Shippen School for Girls. The first Pennsylvania State Normal School is at Millersville, near Lancaster; and the old Moravian Linden Hall Seminary is at Lititz. The city, situated in the most fertile farming and tobacco-growing region in the State, is the centre of a large trade in tobacco and produce and has numerous tobacco warehouses, cigar factories, two large silk mills, rolling mills, cotton mills, cork works, caramel factories, ironworks, and manufactories of brick machines, emery wheels, umbrellas, carriages, and watches. The government is administered by a mayor, elected every two years, and a bicameral council which controls elections to most of the subordinate offices, the executive's power of appointment, which in these cases is subject to the consent of the council, extending only to police officers, police turnkey, and city-hall janitor. The city

spent in 1912-13, in maintenance and operation, \$680,000, the main items of expense being \$157,000 for schools, \$108,000 for the water works, which are owned by the municipality, \$36,000 for the police department, and \$29,000 for the fire department. The income amounted to \$626,000. Pop., 1890, 32,011; 1900, 41,459; 1910, 47,227; 1914 (U. S. est.), 49,685.

Settled about 1718, and at first called Hickory Town, Lancaster received its present name in 1729, was chartered as a borough in 1742, and became a city in 1818. In December, 1763, the Paxton Boys massacred a band of neutral Indians here. While Philadelphia was occupied by the English in 1777, Congress sat in Lancaster for a few days, and in 1784 a band of soldiers marched to Philadelphia from here to force Congress to provide for paying the Continental army, in consequence of which mutiny Congress adjourned to Princeton. Lancaster was the capital of the State from 1799 to 1812. It was the birthplace of Gen. John Fulton Reynolds (q.v.), in whose honor a monument has been erected on the battlefield of Gettysburg. Consult Mombert, *An Authentic History of Lancaster County* (Lancaster, Pa., 1869), and *Pennsylvania Historical Collections*, vol. i (Philadelphia, 1853).

LANCASTER. A town and the county seat of Lancaster Co., S. C., 94 miles by rail north by east of Columbia, on the Southern and the Lancaster and Chester railroads (Map: South Carolina, D 2). It is the centre of a fertile district, growing cotton, tobacco, and grain, and has extensive cotton and cotton-oil mills and a fertilizer factory. The water works are owned by the town. Pop., 1900, 1477; 1910, 2098.

LANCASTER, DUCHY OF. An English duchy and county palatine (see PALATINE), created by royal charter. Edward III., on the death of Henry, Duke of Lancaster, conferred the duchy on John of Gaunt and his heirs forever. During the Wars of the Roses Henry VI and Edward IV both endeavored so to settle the duchy that it should descend to the heirs of their body apart from the crown and continue with them in the event of their losing the latter. The result of these attempts has been the preservation of the duchy as a separate possession in order and government, but united in point of inheritance, the monarch being possessor, not as King of England, but as Duke of Lancaster. The duchy is almost coequivalent with Lancashire. The revenues, which from £29,000 (\$145,000) in 1847 had increased to £108,016 (\$526,038) in 1913, are paid over to the privy purse. They are wholly exempted from parliamentary control, except that the annual account for receipt and expenditure is presented. The county palatine forms only a portion of the duchy, which includes considerable estates not within the county palatine. There is a chancellor of the duchy (i.e., of the part of it which does not lie within the county) and of the county palatine, which two offices are generally united. The Duchy Court of Lancaster, held at Westminster and presided over by the Chancellor, or his deputy, exercises jurisdiction in all matters of equity relating to the lands of the duchy. The administration of justice has been assimilated to that of the rest of England since 1873. The office of Chancellor is a political appointment, which is usually conferred on a statesman of eminence, frequently a member of the cabinet, who is expected to devote his

time to such larger questions occupying the attention of government as do not fall within other departments. The stipend is £2000 (nearly \$10,000) per annum. Consult Fishwick, *A History of Lancashire* (London, 1894), and *John of Gaunt's Register*, edited by Armitage-Smith (ib., 1911).

LANCASTER, HOUSE OF. The name of the dynasty which occupied the throne of England from 1399 to 1461 and again in 1470-71. The title originated during the reign of Henry III., who in 1267 made his second son, Edmund Crouchback, Earl of Lancaster. On the failure of male heirs, John of Gaunt, fourth son of Edward III., married Blanche, the Lancastrian heiress, and in 1362 was created Duke of Lancaster. His older brother Lionel was at the same time created Duke of Clarence and in this manner originated the rival houses of Lancaster and York. John of Gaunt's son, Henry IV., seized the crown, dethroning Richard II (q.v.). Henry's usurpation could be justified on hereditary principles only upon the assumption that the inheritance to the crown could not pass through females, or that his ancestor, Henry Crouchback, was really older than Edward II., having according to the legend been set aside on account of a physical deformity, though in fact he was called Crouchback from having won the Crusader's cross. Henry's rule was really based upon the acceptance by Parliament of his defective title, and he is the first English king who ruled by parliamentary right. Henry IV (1399-1413) and Henry V (1413-22) maintained their position through the support of Parliament and the Church, which they were careful to conciliate, and through the brilliant victories of Henry V in France, but the long minority and inefficient rule of the last Lancastrian, Henry VI, which began in 1422, was a time of violence, ending in the Wars of the Roses. Consult Gairdner, *The Houses of Lancaster and York* (London, 1886); Ramsay, *Lancaster and York* (2 vols., Oxford, 1890); Stubbs, *The Constitutional History of England* (5th ed., vol. iii, ib., 1895). Hartwright, *The Story of the House of Lancaster* (London, 1897); and the bibliographies under the separate kings. See ENGLAND; JOHN OF GAUNT; HENRY IV, V, VI.

LANCASTER, SIR JAMES (c.1550-1618). An English navigator. Of his early life, which was spent among the Portuguese, little is known. He first comes into prominence as commander of one of the English vessels under Drake in the attack on the Spanish Armada in 1588, and in the same vessel, with two convoys, he sailed from Plymouth in 1591 and, after a voyage to India full of exciting adventures, returned in 1594 with rich Portuguese spoil. Another profitable prize-seeking expedition off the African coast, and the damage inflicted on the Spanish-Portuguese trade, resulted in the organization of the East India Company and his appointment as commander of an expedition of four vessels which sailed from Torbay in 1601. Warmly received by the kings of Atchin and of Bantam as an enemy of the Portuguese, he established most favorable commercial relations with them and on his return to England in 1603 was knighted. Having become wealthy, the rest of his life was spent in England as a director of the East India Company. He interested himself in the project for discovering the Northwest Passage, and on his advice the gov-

ernment sent out an expedition. Baffin named a strait, opening into Baffin Bay, Lancaster Sound, in his honor. Consult Markham (ed.), *The Voyages of Sir James Lancaster* (London, 1877), published by the Hakluyt Society.

LANCASTER, JOSEPH (1778-1838). The founder of the Lancastrian system of instruction, one of the rival systems of monitorial instruction (q.v.). Lancaster was born in London and served as a seaman, but, inspired by philanthropy, began the work of teaching without any previous training and before the age of 20 had more than 1000 pupils under his care. This was made possible by his adoption and improvement of the plan of instruction first formulated by Dr Andrew Bell, of Madras, and hence also called the Madras system of instruction. Lancaster soon gained the support of some of the nobility, and the Royal Lancastrian Society was formed, schools were established, and buildings erected. From this grew the British and Foreign School Society, supported by the non-conforming churches, which continues to exist and supports many of the public schools of England, although the Lancastrian ideas have long since been outgrown. Lancaster's ideas had a great vogue in England and for a time in Holland, France, and Germany, but, quarreling with his patrons, he came to the United States, where he lectured with success. His ideas were very popular throughout the Eastern and Northern States. In New York, Baltimore, and Philadelphia, as well as in smaller communities, this system was generally adopted. After the death of Lancaster, which occurred as the result of an accident in New York City, his family removed to Mexico, where this educational system was received with great favor, and legislative aid was granted under the control of a national Lancastrian system. The plan was also received with favor in some South American countries. See article on **MONITORIAL SYSTEM**. Consult: Lancaster, *Improvements in Education* (New York, 1833); the *Educational Record* (ib., 1867-68); Gill, *System of Education* (Boston, 1899); Salmon, *J. Lancaster* (New York, 1904); A. B. Binns, *A Century of Education, 1808-1908, being the Centenary of the British and Foreign School Society* (London, 1908).

LANCASTER SOUND. A channel connecting Baffin Bay with Barrow Strait, between North Devon and Cockburn Island, in lat. 74° N. (Map: America, North, K 2). Discovered in 1616 by Baffin, it was explored by Parry in 1819. It is the only part of the Northwest Passage that is navigable every year. See **POLAR RESEARCH**.

LANCASTER, or LANCASTRIAN, SYSTEM. See LANCASTER, JOSEPH; MONITORIAL SYSTEM.

LANCE (OF., Fr. *lance*, from Lat. *lancea*, from Gk. λόγχη, *lonché*, light spear), THE HOLY. 1. The name applied in the Greek church to the knife with which the priest cuts the bread at communion. This knife is formed like a lance, designed to imitate the spear by which Christ was pierced. 2. A lance which is claimed by tradition to be the one employed by the Roman soldier to thrust into the side of Christ on the cross. It was said to have been discovered by Helena, the mother of Constantine, and was long preserved in the portico of the Church of the Holy Sepulchre. Thence the head was carried to Antioch. There by a vision it was discovered by the Crusaders in 1098, pawned

by Baldwin II to the Venetians, from whom Louis IX of France obtained it in 1239 and carried it to Paris. It was seen there as late as 1796, but now it has disappeared. The shaft of the lance was in Constantinople until 1492, when the Sultan sent it to Innocent VIII, and it is now preserved in St. Peter's at Rome. Another lance, whose tradition can be traced as early as 1273, claiming to be the true holy lance, is at Vienna, and still another is at Cracow. For the Roman relic, consult De Mély, in P. E. D. Riaut, *Exuvie Sacre Constantinopolitane*, vol. iii (Geneva, 1878).

LANCE, GEORGE (1802-64). An English painter of still life, born at Little Easton, Essex. After working in a factory at Leeds he went to London, met Landseer by chance, and became a pupil of Haydon and a student at the Royal Academy. He exhibited in all 135 works at the British Institution, 48 at the British Artists, and 38 at the Royal Academy. He ranked first among contemporaneous English painters of flowers, fruit, and dead game. There are numerous examples of his work in the National Gallery and in the Tate Gallery, London.

LANCELET (so called from its shape). One of the primitive vertebrates, found on sandy beaches, classified as of the class Acrania. See **AMPHIOXUS**.

LANCELOT (län'se-lôt) OF THE LAKE. A character in the Arthurian romances. The oldest extant form of the Lancelot story is contained in the German poem *Lanzelet* (before 1200), by Ulrich von Zatzikhoven. According to this account a fairy called the Lady of the Lake carries him away when only a year old to her castle on an island in the sea. At the age of 15 he sets out on his knightly exploits, in the course of which he is victorious in a tournament held by Arthur, enters the castle of the dead, where he is enchanted, kills a giant, wins the domain of Iweret, and marries his chaste daughter Iblis. It is very probable that the tale, as thus related, is Celtic in the main essentials. It is even possible that it was the subject of some Anglo-Norman poem that found its way into Germany, and it may have been brought by Hugh Morville, King Richard's hostage in Germany (1194). Somewhat earlier than the German poem, the French trouvère Chrestien de Troyes (q.v.) made use of the Lancelot story for a love romance. In his *Chevalier de la charrette* (or *Knight of the Cart*) (about 1170), Lancelot appears as the lover of Guinevere, the wife of Arthur. The Queen is carried away by Meliagraunce to his castle, whence no one ever returns. Lancelot hastens in pursuit; but, losing his horse, he is fain to ride in a cart driven by a dwarf. He defeats the ravisher in single combat and brings back the Queen. Throughout this adventure the passion of Lancelot and Guinevere is kept prominent as the ruling motive. For following in further detail the development of the Lancelot story, there is not sufficient material. No doubt it continued to be the theme of many Anglo-Norman poets. Early in the thirteenth century it was expanded and thoroughly woven into Arthurian legend, in the French prose romances *Lancelot*, consisting of four parts: the *Lancelot proper*, the *Queste del Saint Graal*, the *Grand Saint Graal*, and *La mort du roi Artus*. The manuscripts of this immense prose romance commonly ascribe the authorship to

Walter Map, Chancellor of Henry II (q.v.); but this is probably a fiction. Map may, indeed, have written of Lancelot in Norman-French verse, which served as the source of the German *Lanzelet* and other subsequent romances. If so, his work is merged beyond recognition in that of several other hands. The authorship of the prose *Lancelot*, as it now stands, is unknown. From the French the story passed into the *Morte d'Arthur* of Sir Thomas Malory, printed by Caxton in 1485.

Of the romance thus fully developed, the situation and the main incidents are well known. Lancelot, of royal lineage, is brought to Arthur's court by the Lady of the Lake to be dubbed a knight. He proves his valor in the King's wars and tournaments. The most beautiful and generous as well as the bravest knight in all the world, he is beloved by the Queen, with whom he carries on an intrigue. In course of time Elaine, or the fair maid of Astolat, becomes enamored of him and dies for her love. With Galahad, Perceval, and other knights, he seeks the adventure of the Holy Grail (q.v.), but fails in the quest because of his sin. He is discovered in the chamber of the Queen, with whom he flees to Joyous Gard. On the intervention of the Pope Lancelot surrenders Guinevere to the King and departs over the sea. Arthur, leaving his nephew Modred in charge of his realm, pursues Lancelot. In his absence Modred is crowned King at Canterbury. Arthur returns, slays him in a great battle, but is himself mortally wounded. In a magic barge he is borne by fairies to Avalon, the land of immortality, to be healed of his grievous wound. Lancelot, hearing of Arthur's death, comes to England to seek the Queen, who has retired to the nunnery at Almesbury. Dismissed by her, he also retires to a hermitage, where he passes the rest of his life in penance and prayer. After the death of the Queen he sickens and dies. His body is laid in the chapel at Joyous Gard, but his soul is borne to the gates of heaven by hosts of angels. The story of Lancelot and Guinevere has been treated by poets of the first order. As to the romance of the thirteenth century the passion of these lovers was awakened by a fatal kiss. That incident Dante immortalized in the sinful love of Francesca and Paolo (*Inferno*, v). The love of Lancelot and Guinevere is the centre of interest in Tennyson's *Idylls of the King*; and two motives from it were impressively handled by William Morris in "The Defence of Guenevere" and "King Arthur's Tomb".

Bibliography. Rhys, *Studies in the Arthurian Legend* (Oxford, 1891); Sommer, on the sources of Malory's *Morte d'Arthur*, in his edition of that work (London, 1891); W. W. Skeat, "The Author of Lancelot of the Laik," in *Scottish Historical Review*, vol. viii (Glasgow, 1910). For abstracts of the early romance: Newell, *King Arthur and the Table Round* (Boston, 1897); Weston, *The Legend of Sir Lancelot du Lac* (London, 1901); Bräuner, *Der altfranzösische Prosaroman von Lancelot del Lac* (Munich, 1911); M. M. Gray (ed.), *Lancelot of the Laik, from the Cambridge University Library Manuscript* (Edinburgh, 1912); and for the "Lanzelet" of Ulrich von Zatzikhoven, *Romania*, vol. x (Paris, 1881).

LANCER. A cavalry soldier armed with the lance. Lancer regiments were first brought into the regular army service by Napoleon. They

had previously been confined exclusively to the Cossack arm of the Russian service. The lance is from 8 to 11 feet long, of bamboo or steel tubing having a sharp, spearlike point made of steel, and a metal-encased heel. A little distance below the point of the lance is placed a small pennon. Lancer regiments have proved particularly effective when used against defeated or demoralized infantry and have been increasingly employed in both the German and British establishments. The problem of their future, in view of recent developments in rapid and effective rifle fire, is the problem of cavalry in general. As an accompaniment to expert horsemanship, the dexterous use of the lance is of the greatest value, and the cavalry of all armies using it practice at various feats of skill. In single combat with a swordsman (see FENCING) the lancer strives to keep his opponent on his left flank, thus securing the advantage of his longer weapon and freer play—and considerably handicapping the swordsman. The foot soldier, armed with rifle and bayonet, attacks the lancer on his lance side, manoeuvring to get inside his guard—a form of attack which is specially advantageous because of the unwieldiness at close quarters of the lance as a weapon of defense. There are 15 regiments of lancers in the Bengal cavalry division of the British Indian native army. During the British-Boer War of 1899-1902 the British lancers were successfully employed against the Boers, on the few occasions that contact between the combatants was possible, notably at Elaadslaagte. It was observed, however, that in field operations the lancer cavalry, owing to their lances, were readily seen at great distances by the Boers and to that extent were limited in their usefulness. In the Great European War of 1914 conflicts of German and Belgian lancers were a conspicuous feature of its early stages. Instead of the bamboo staff employed in most services, the Germans used a tubular lance of steel 3.2 meters in length. In the Belgian army previous to the war there were four regiments of lancers armed with a bamboo lance 2.85 meters in length. In the British army there were six regiments of lancers, while in the French army a number of the dragoon regiments were equipped with the lance. Whatever may be the future of cavalry in general, the opening years of the twentieth century and the Great European War witnessed a growing employment of lancer regiments. See CAVALRY.

LANCERS. A square dance for eight or 16 couples. It was probably invented about 1819, either by Joseph Hart, who published, the following year, *Les Lanciers: A Second Set of Quadrilles for the Pianoforte, with Entirely New Figures*; or by Duval, of Dublin, who also at this time published a set. The lancers was first danced in London in 1850, but it had been introduced in Paris by Laborde in 1836. It originally consisted of five figures—La Rose, La Ladoiska, La Dorset, Les Lanciers, and L'Etoile—and was a most intricate dance.

LANCET FISH (so called from the sharp spines, one on each side of the tail), or HANDSAW FISH. One of a family (Alepisauridæ) of ferocious pelagic fishes of the order *Isomi*. (Cf. LANTERN FISH.) They are found in both the Atlantic and Pacific, but are rarely seen except when cast ashore dead or dying by storms, or are caught by deep-sea lines. They are elongated, scaleless, swift-moving fishes, with the

snout prolonged, the mouth deeply cut and armed with long fangs and numerous small teeth (see Plate of LANTERN FISHES): but the lower jaw is unable to drop far, so that the mouth cannot be widely opened. The gill openings are very wide; there is no air bladder. The fins are exceedingly delicate, and the dorsal one may be folded down out of sight in a groove along the back. Every part of the skeleton is extremely fragile. About a dozen species are known, all of the genus *Plagyodus*, and varying from 2 to 4 feet long. The lancet fish proper is *Plagyodus ferax* of the North Atlantic. A Western species (*Plagyodus asculapius*), also called wolf fish, is known by several specimens from California and Alaska. Another Pacific species (*Plagyodus borealis*) is the one called handsaw fish, in allusion to the serrations on the first ray of the ventral fin—a characteristic, however, of the whole group.

LANCET WINDOW. A long and narrow window with acutely pointed-arched head. This form was much used in France and Great Britain during the early period of Gothic architecture and was retained in England and Scotland long after it had been supplanted in France by the wider tracered forms. Several lancet windows are frequently grouped together in early English Gothic, so as to produce an effect of elegant simplicity. The groups of two and three at Salisbury and Ely, and the famous Five Sisters at York, are especially good examples. In some cases the central lancet is higher than the others. The development of tracery drove out the lancet.

LANCEWOOD. The wood of a small West Indian tree, *Ocandra virgata*, or *Bocagea virgata*, of the family Anonaceæ, valued for its strength and elasticity. It is used by coach-builders for shafts and carriage poles, for which it is specially fitted. The tree, which is very straight, seldom attains a diameter of more than 9 inches with the bark on. White lancewood, derived from *Bocagea laurifolia*, or *Ocandra laurifolia*, is little used. Lancewood is also derived from *Duguetia quilarensis* and other species in South America.

LANCHOW, lan'chow', *Chan pron lán'-chō'*. The capital of the Chinese Province of Kansu, situated on the right bank of the Hoang-ho and near the Great Wall, in lat 36° 8' N. and long 103° 55' E. (Map China, H 4). It is one of the most important cities of north China, lying at the converging of trade routes connecting China with Turkestan, and Tibet. The town is . . . of wood and has well-paved streets. There are an ammunition factory and manufactures of cloth and camel's-hair goods, all operated by steam. Lanchow carries on an extensive trade in silk stuffs, fur, metal, and wooden articles, grain, vegetables, fruit, and tea. Pop. (est.), 500,000.

LANCIANI, lán-chá'né, RODOLFO AMEDEO (1847-) An Italian archaeologist, born in Rome. He studied at the Roman College and at the University of Rome and also was a pupil of the famous Christian archaeologist De Rossi. At the age of 20 Lanciani assisted at the excavations at Ostia (q.v.) and after the establishment of the Italian government in Rome engaged in its archaeological service almost continuously. In 1872 he became secretary of the Archaeological Committee, three years later vice director of the Museo Kircheriano, from 1875 to about 1895 he was director of excavations,

and after 1878 he was professor of Roman topography in the university. In the United States he became well known through his books dealing with the excavations and monuments of ancient Rome and through his visit to America and his lectures in 1886-87. The most important of his publications are: *I comentarii di Frontino intorno le acque et gli acquedotti* (Rome, 1880), a comprehensive study of the water supply and distributing systems of ancient Rome; *Ancient Rome in the Light of Recent Discoveries* (Boston, 1888), his American lectures; *Ricerche sulle XIV regioni urbane* (Rome, 1890); *L'itinerario di Eusebio e l'ordine di Benedetto canonico* (ib., 1891); *Pagan and Christian Rome* (Boston, 1893); *The Ruins and Excavations of Ancient Rome* (ib., 1897); *The Destruction of Ancient Rome* (New York, 1899); *Forma Urbis Romæ* (Milan, 1893-1901), a map of Rome in 18 parts, 46 plans, on the scale 1:1000, showing all the ancient monuments and the excavations, *New Tales of Old Rome* (Boston, 1901); *Golden Days of the Renaissance in Rome* (ib., 1906); *Wanderings in the Roman Campagna* (ib., 1909).

LANCIANO, lán-chá'nó (Lat. *Anxanum*). An episcopal city in the Province of Chieti, Italy, 12 miles southeast of the city of Chieti, and 8 miles from the Adriatic and the nearest railway stations (Map: Italy, E 3). It occupies three hills, two of which are connected by an ancient bridge of great square blocks of stone. The central position of this town caused it to be selected for judicial and civil headquarters during the Roman and the Gothic periods. It has a gymnasium, technical schools, a seminary, a public library, a city hospital, an asylum for the aged, one for infants, and a municipal theatre. The country produces grain, fruit, wine, oil, and silk, and there are important hemp and linen factories. Pop. (commune), 1901, 18,528; 1911, 19,917.

LANCRET, lán'krá', NICOLAS (1690-1743). A French genre painter. He was born in Paris, of wealthy parentage, and was first apprenticed to an engraver, whom he left to study painting under D'Ulin, a professor of the Academy. His friendship and admiration for Watteau moved him to study under Gilot, with whom he remained several years. Lancret imitated Watteau, both in manner of painting and in choice of subjects. He was admitted to the Academy in 1719 as painter of "fêtes galantes" and afterward became councilor of the Academy (1735). He is not the equal of Watteau, though he sometimes approaches him; his brush is more conventional, and he had less imagination. Yet his compositions at best, while airy and graceful, are natural and true. Their dominant color note is a silvery gray. Lancret is most in his element when rendering the frolics and revels of the Regency. His art is best represented in the royal palaces of Berlin and Potsdam by no less than 28 examples, purchased by Frederick the Great. Among the most famous are the "Magic Lantern," "The Bird Catcher," New Palace, Berlin; "Le Moulinet" and "Dance" and "The Fountain" at Potsdam. The Louvre possesses his "Four Seasons" and eight others, including the delightful pastel, "The Music Lesson." Among those in French provincial museums "The Hum Lunch" (Chantilly) is especially noteworthy. In the National Gallery, London, are "The Four Ages"; in the Wallace collection, nine examples, and in the Hermitage,

St. Petersburg, six. Lancret excelled also in pastels. Excellent drawings by him are in the British Museum. Consult: Ballot de Sovot, *Eloge de Lancret* (Paris, 1743; new ed., ib., 1874); Dilke, *French Painters of the Eighteenth Century* (London, 1899); Foster, *French Art from Watteau to Prud'hon* (ib., 1905).

LAND (AS. *land*, OHG. *lant*, Ger. *Land*; connected with Ir. *land*, *lann*, Welsh *llan*, Corn., Bret. *lan*, OChurch Slav. *lědina*, land). As a technical term of the law of England and America, the term "land" comprehends not only the surface of the earth, but a vertical area extending indefinitely downward towards the centre of the earth and indefinitely upward towards the sky, together with everything which has become permanently affixed to the soil within the limits of that space. It thus includes all waters collected in wells, cisterns, or ponds, as well as waters percolating through the soil; all improvements of a durable or permanent character, such as houses, fences, monuments, etc., and the vertical column of air which rests upon the surface as its base.

As thus employed, the term describes the subject matter of real property rather than the nature of the property, land as such not being capable of absolute ownership, but being subject to certain rights of user and enjoyment, known as estates. But the term "land" is not coextensive in meaning with real estate, as certain rights over land, as leasehold interests, are in our legal system classified as personal property, and, on the other hand, things which have no connection with land, such as heirlooms, are under certain circumstances regarded as real property. See ESTATE, FIXTURES, HEREDITAMENT; REAL PROPERTY.

LAND, GOVERNMENT. See GOVERNMENT LAND; LANDS, PUBLIC.

LANDAU, län'dou. An old town in the Rhine Palatinate, Germany, situated on the Queich, 11 miles south of Neustadt (Map Germany, C 4). It has an historical museum and a thirteenth-century church. It has manufactures of iron, machinery, umbrellas, gas and water mains, wire, hats, clocks, furniture, leather, and soap. It has a large trade in produce, fruit, and wine of the surrounding country, and a yearly cattle market. Landau became a free Imperial city in 1290, was taken eight times during the Thirty Years' War, and, having passed to France by the Peace of Westphalia, was fortified by Vauban in 1668. It was annexed to Bavaria in 1816; its fortifications were razed in 1871. Pop., 1900, 15,823; 1910, 17,767.

LANDAU, län'dä. See CARRIAGE.

LAND BANKS. Banks of issue organized for the purpose of loaning credit on land. In England a National Land Bank was incorporated by Act of Parliament in 1696. Landed estate, made over to the company by the subscribers, took the place of capital stock and served as security for notes issued. The object of the corporation was to make a large loan to the government and to lend money to individuals on land as security. The interest paid by individuals was not to exceed 4 per cent, and land on which interest was in arrears for two years could be sold. The scheme was found wholly impracticable and, in spite of many tempting offers made by its promoters, failed to obtain the necessary amount of subscriptions. In 1714, 1732, and 1740 attempts were made in

New England to establish similar land banks, but it was believed that the security of land held by the corporation was sufficient to enable the notes to circulate, and therefore it was believed that bank capital and current redemption of notes were unnecessary. Instead of a promise to pay on demand, the notes merely bore the statement that the members of the company would accept them at their face value in all mercantile transactions, and in some cases the promise that the note would be redeemed in 20 years. None of these banks were in existence long enough to affect trade. The issue of notes by the banks established in 1714 and 1732 was promptly suppressed by the colonial governments, and in 1741 the land banks of 1740 were declared illegal by Act of Parliament.

Bibliography. White, *Money and Banking* (Boston, 1892); Rogers, *First Nine Years of the Bank of England* (Oxford, 1887); Davis, *Currency and Banking in the Province of Massachusetts Bay*, vol. ii (Publications of the American Economic Association, May, 1901).

LAND CRAB. Any species of crab (q.v.) which in a mature state is not aquatic, having become adapted to a terrestrial mode of life. Such are now grouped into a family, the Gecarcinidae, and divided into several genera. The species are numerous and all inhabitants of warm countries. They very much resemble the common crabs of our shores and are remarkable as animals breathing by gills, and yet not aquatic, some of them inhabiting very dry places, where they burrow in the sand or earth; but some degree of moisture is absolutely necessary to them to prevent the desiccation of their gills. Many, and probably all of them, carry their eggs to the water, for which purpose some of them annually migrate from considerable distances to the sea; but there is reason to suppose that some deposit their eggs in fresh water. The black crab, or mountain crab (*Gecarcinus ruricola*), of the West Indies, usually resides in woods and on hills often 2 or 3 miles from the sea, which, however, it regularly visits in the months of April and May. Like most of the other species, this land crab is active chiefly during the night, and except in rainy weather it seldom leaves its burrow by day. It feeds chiefly on vegetable food. When in season, it is highly esteemed for the table, as some of the other land crabs also are; and its spawn or roe, which before being deposited forms a bunch as large as a hen's egg, is accounted a delicacy. Another species of *Gecarcinus* abundant in Jamaica is known as the white land crab. It occurs in dry and somewhat sandy fields near or at some distance from the shore. It reaches a large size, the body being 4 or 5 inches across and the legs very long. The color is dull grayish white. During its migration to the ocean this crab is a great nuisance in some localities from its habit of going over, under, or through the houses, but not around them. The negroes eat these crabs, but they are not relished by the whites. A land crab of Ceylon (*Ocypoda*) is so troublesome on account of the burrows which it makes in the dry soil of the equestrian promenade at Colombo, that men are kept in regular employment to fill them up. The grass lands of some parts of India swarm with small land crabs, which feed on the grass or on green stalks of rice. The hermit crab (q.v.) also occasionally adopts a terrestrial life; a common West Indian species (*Cenobita diogenes*) occurs

at Key West, far from water, living under stones in the shells of land snails. Consult Lowe, *A Naturalist on Desert Islands* (London, 1911). See COCONUT CRAB.

LANDEN, JOHN (1719-90). An English mathematician. He was born at Peakirk, Northamptonshire. From 1762 to 1788 he was land agent of Earl Fitzwilliam. He became known as a mathematician through his contributions to the *Ladies' Diary* in 1744 and subsequently through his papers in the *Philosophical Transactions* from 1754 to 1785. He is chiefly remembered for the "Landen theorem" for the expression of the arc of a hyperbola in terms of two elliptic arcs. He published: *Mathematical Lucubrations* (1755); *The Residual Analysis* (1764); *Mathematical Memoirs* (2 vols., 1780-89).

LANDER, FREDERICK WEST (1821-62). An American soldier, born in Salem, Mass. He was educated at the Norwich Military Academy in Vermont and took up the profession of civil engineering. The United States government employed him on transcontinental surveys to select a route for a Pacific railroad. Later he undertook a survey for the same purpose at his own expense and was the only man of the party to survive. He constructed the overland wagon route in the face of great difficulties and constant hostility of the Indians. During the early part of the Civil War he served with distinction on secret missions and on the staff of General McClellan, until his sudden death from congestion of the brain, at which time he had the rank of brigadier general of volunteers. He was engaged in the capture of Philippi, the battle of Rich Mountain, and many minor skirmishes.

LANDER, LOUISA (1826-). An American sculptor, born at Salem, Mass. She studied under Crawford in Rome, where she modeled her "To-Day," a marble figure, symbolical of America, and "Galatea." Among her other works are a life-size figure of Virginia Dare, the first English child born in America; "Undine"; a reclining statue of "Evangeline" Ceres Mourning for Proserpine"; "Captive Pioneers"; and numerous portrait busts.

LANDER, RICHARD LEMON (1804-34). An English African explorer, born at Truro, Cornwall, where his father was an official. After service with London families, during which he visited the West Indies and the Continent, he accompanied Major Colebrooke as servant to Cape Colony in 1823 and traveled with him across the colony. A taste for exploration led him to secure service with Capt. Hugh Clapperton, whom he attended on his second and last expedition to the interior of western Africa in 1825. After Clapperton's death in 1827 at Chungary, Lander with great difficulty reached the coast and returned to England in 1828. *The Journal of Richard Lander from Kano to the Coast* was printed with Clapperton's *Journal* (1829). In the following year Lander published *Records of Captain Clapperton's Last Expedition to Africa, and the Subsequent Adventures of the Author* (2 vols., 1830). These works exhibited qualifications that induced the British Ministry to give him command of an expedition to explore the course and termination of the Niger. He and his younger brother, John Lander, left England in January, 1830, and after exciting adventures, before December of the same year had descended the Niger from Bousa and had determined the confluence of the

Benue, or Chadda, with the Niger and the outlet of the latter river by several deltaic mouths into the Bight of Benin. For this service Lander received the first gold medal bestowed by the Royal Geographical Society of London. The brothers' journals were purchased by Murray, the publisher, and edited by Lieut. Alexander Bridport Beecher and appeared as *Journal of an Expedition to Explore the Course and Termination of the Niger* (3 vols., 1832); the work was translated into several European languages. While in command of an expedition organized by a company of Liverpool merchants to open up commerce in the African interior (1832-34), Lander was shot in an affray with natives at Ingiamma on the Niger and died shortly afterwards, from the effects of his wound, at Fernando Po. Consult Laird and Oldfield, *Narrative of an Expedition into the Interior of Africa in Steamers, 1832-34* (London, 1835).

LANDES, länd (Fr, heaths). Extensive tracts of land in the southwest of France, extending along the Bay of Biscay for a distance of about 130 miles and covering an area of more than 5000 square miles (Map: France, S., D 4). The surface in general is flat and sandy marshland, over which the peasants travel in some parts mainly on stilts. There are, however, numerous dunes along the coast, some of them reaching a height of 250 feet. Attempts to reclaim this vast region began at the end of the eighteenth century, and now a considerable part of it is covered with pine forests. Dune palisades have been built to prevent encroachment of the sand on the vegetation. The climate has also been improved by the digging of canals for the outlet of the stagnant water. The inhabitants are engaged chiefly in forestry and cattle raising.

LANDES. A maritime department of southwest France, one of the largest but most thinly peopled in the country, bounded on the west by the Bay of Biscay (Map: France, S., D 4). Area, 3615 square miles. Pop, 1901, 291,856; 1911, 288,902. North of the Adour River the greater part of the surface is composed of the *landes* (q.v.), which afford a bare pasturage to sheep and cattle, but south of this river, in the hilly La Chalosse region, it is very fertile. Its chief industries are connected with cork, timber and its by-products, charcoal, tar, turpentine, and rosin. There are also salt works and stone quarries. The principal river is the Adour. Capital, Mont-de-Marsan.

LANDESMANN, län'des-mán, HEINRICH (1821-1902). An Austrian lyricist, novelist, and essayist, whose pseudonym was Hieronymus Lorm. He was born at Nikolsburg, Moravia, and studied in several schools in Vienna. For the most part, however, his education had to be private, because of repeated sickness, and because in his fifteenth year he became partly blind and completely deaf. Later in life he lost sight entirely. His literary career began with *Abdul* (1843). Soon after this he went to Berlin and published *Wiens poetische Schwingen und Federn* (1847), a very clever piece of political and literary criticism which roused the anger of Metternich. He became critic for Kühne's periodical *Europa* and wrote *Grafenberger Aquarell* (1848) while in Berlin. His novels include: *Ein Zögling des Jahres 1848* (1855; later eds., under the title *Gabriel Solmar*); *Am Kamin* (1856); *Der ehrliche Name* (1880); *Ein Schatten aus vergangenen Tagen*

(1882); *Ein Kind des Meeres* (1882); *Das Leben kein Traum* (1888); *Geheimrätin* (1891). He also wrote dramas, such as *Die Alten und die Jungen*, *Das Forsthaus*, and *Hieronymus Napoleon*; critical essays; *Gedichte* (1870), *Neue Gedichte* (1877), and *Nachsommer, neue Gedichte* (last ed., 1901). These lyrics are probably the most important of Landesmann's works. He is one of the foremost German poets of pessimism. Consult Wittner, *Oesterreichische Portraits und Charaktere* (Vienna, 1906).

LANDGRAF, länt'gräf, GUSTAV (1857-). A German classical scholar, born in Lichtenfels. He was educated at Erlangen and Würzburg; from 1879 to 1905 he taught in various secondary schools and then became director of the Schweinfurt Gymnasium, in the next year of a Gymnasium in Bayreuth, and in 1913 of the Maximiliansgymnasium of Munich. He edited school textbooks, especially of some of Cicero's writings, contributed to Wölflin's *Archiv für lateinische Lexicographie*; and published studies of Cæsar's historical works and his continuators, a *Latensische Lexicographie* (11th ed., 1911), which has been translated into Italian (1898) and French (2d ed., 1907), and *Beiträge zur historischen Syntax der lateinischen Sprache* (1899). He contributed also to vol. iii of *Historische Grammatik der Lateinischen Sprache*, by various scholars (Leipzig, 1903).

LAND'GRAVE, or **LAND'GRAF**. See **GRAF**.

LANDING FORCE, or **LANDING PARTY**. An organized force detailed from the crew and officers of a ship and designed for operating on shore when no other military forces are available. It usually consists of nearly all the marines serving on board the ship and of one or more companies of bluejackets (i.e., enlisted men who are not marines—men enlisted as landsmen are *bluejackets*, but not strictly *sailors*). The men are armed with rifles, machine guns, and 3-inch field guns when the latter are thought necessary. They are landed in boats, light infantry boats being the first ashore, the men in the other boats following when the first party is in position to prevent a surprise of the main body. When landing in the face of opposition, the force is supported by the fire of armed boats, and the guns of the ship if possible. In any case, care is exercised to avoid being under fire of the enemy, except for a few seconds, while still in the boats.

A naval infantry company consists of 48 men in ranks, six petty officers (two acting as the right and left guides), a captain of company, and two lieutenants of company. A machine-gun detachment consists of 12 men and a petty officer; the crew (called a *section*) of the 3-inch naval field gun consists of 24 men and 3 petty officers in charge of an ensign, or warrant officer. Two sections of artillery make a platoon, two platoons a battery, and two or more batteries a battalion. It will be noticed that two machine-gun detachments are equal to a section of artillery or infantry; two sections of artillery are equal to a platoon of artillery or a company of infantry. These equalities in numbers simplify the organization and drill of the men at infantry and artillery. When the landing force of a ship consists of several companies, it is called a *battalion*. Two to four battalions form a *regiment*. Battalions are commanded by lieutenant commanders or lieutenants, and regiments by commanders or captains. If two or

more regiments are landed, they form a *brigade*, which is commanded by a captain or rear admiral.

LANDIS, KENESAW MOUNTAIN (1866-). An American judge. Born at Millville, Ohio, he attended the public schools of Logansport, Ind., and in 1891 graduated from the Union College of Law, Chicago. Except for two years, when he was private secretary to W. Q. Gresham, then United States Secretary of State, Landis practiced law in Chicago until 1905, when he became United States district judge for the northern district of Illinois by appointment of President Roosevelt. On the bench Judge Landis established a national reputation as an independent and fearless judge when he tried the Standard Oil rebate cases in 1907, found the defendants guilty, and, in each offense finable, sentenced the defendants to pay the amount of \$29,240,000 as the sum total of the several violations. Although later reversed by higher courts, the decision was decidedly popular.

LANDIT, or **LENDIT**, län'dé' (Fr. *Pendit*, from *le*, the + *endit*, from ML. *indictum*, assembly, from Lat. *indicare*, to appoint, from *in*, in + *dicere*, to say). **THE FAIR OF**. A celebrated fair in mediæval France. In 1109 the cathedral of Paris received a reputed portion of the true cross. In order to allow this to be seen, the Bishop chose a large open place between Saint-Ouen, Saint-Denis, and Paris, where, on the second Wednesday in June, it should be exhibited. Because of the great gathering of people for the religious festival, merchants flocked thither and held a fair under the auspices of the monks of Saint-Denis. The fair was much frequented by merchants from Normandy, Flanders, and the north of France. Because of the civil wars, the fair after the middle of the sixteenth century was held in the town of Saint-Denis and soon lost its importance. In the eighteenth century it became a sheep market. Consult Lebeuf, *Histoire de la ville et la diocèse de Paris*, vol. ii (Paris, 1883).

LAND LEAGUE. One of the leagues founded at different times in Ireland to improve the condition of the tenant. In the winter of 1879-80 the agrarian distress caused by partial failure of the crops during the preceding year assumed the proportions of a famine. The peasants were unable to pay rents, and a large number of evictions followed, with consequent resistance and conflicts with the police. At this time Michael Davitt conceived the plan of forming an organization of tenant farmers to further the tenants' interests. Charles Stewart Parnell, the leader of the Irish party, approved of the plan, and on the 21st of October, 1879, the Land League was organized in Dublin, with Parnell as president and Davitt as one of the three secretaries. The object of the league was to raise money for the relief of the distressed Irish peasantry and to furnish them with legal counsel in resisting the landlords. It advocated peasant proprietorship of the soil as a remedy for the existing evils. The league grew in Ireland and was very effective in preventing evictions and reducing rents. Its agitation, however, was incendiary in character, and disturbances became more frequent. To relieve the distress, Gladstone in 1880 secured the passage of a bill providing for the temporary suspension of evictions, but the Lords by an overwhelming majority rejected the measure. This action on the part of the

Lords increased the outrages in Ireland. Although the most radical leaders of the Land League, especially Michael Davitt, deprecated the use of force, they were unable to prevent it. Cattle were frequently mutilated, and murders of landlords occurred in different parts of the country. Rents were often withdrawn altogether. In November, 1880, the government charged Parnell and his associate leaders with conspiracy, but failed to convict them. In order to meet the lawlessness and at the same time to remedy agrarian distress, Forster, the Irish Secretary, introduced coercion bills, which were to be followed by a land act. These bills were passed amid unparalleled scenes of disorder on the part of the Irish members, and the famous Land Act of 1881 became a law. (See IRISH LAND LAWS.) The league was not satisfied with the concessions made, and in the next convention, held at Dublin in the following September, it was decided, on the advice of Parnell, to continue the agitation and resistance until the new law had been tested in the courts. The government thereupon decided to suppress the league. Parnell, Davitt, and the other leaders were arrested and imprisoned. They replied by the famous No Rent Manifesto, exhorting the Irish people to pay no rent while their leaders were in prison. This caused the government to declare the suppression of the league by the decree of Oct. 18, 1881. The reforms which the Land League hoped to institute were taken up and in part effected by the Irish National League under Parnell's leadership, and the principal object of the Land League was realized in 1902, when an Act of Parliament was passed to enable the peasants to acquire title to the lands they occupied. Consult Cashman, *The Life of Michael Davitt* (Boston, 1881); Flatley, *Ireland and the Land League* (ib., 1881); Michael Davitt, *The Fall of Feudalism in Ireland, or the Story of the Land League Revolution* (London, 1904).

LÄNDLER, lënt'lër. A slow waltz in $\frac{3}{4}$ or $\frac{3}{8}$ time, characteristic of Austria, where it originated and received its name from the dialectic *Landel*. It is very popular in Germany. The French Tyrolienne (q.v.) is an imitation of it.

LANDLOCKED SALMON. Any of various salmon—in North America more particularly the winninish (q.v.)—which dwell in large bodies of fresh water and never, or only in exceptional instances, go down to the sea. See SALMON.

LANDLORD AND TENANT. Those who stand in the relationship which subsists when one person holds land of another and in subordination to the latter's title. The relationship arises whenever one having an estate in land grants to another a lesser estate therein. It exists equally, therefore, between a tenant in fee simple and his grantee in fee tail and between a tenant for years and his subtenant. In either case the grantor or lessor, whatever the quality and nature of his own estate, is the landlord of the grantee or lessee, and the latter is the tenant of the former. In all cases the estate or interest remaining in the landlord is technically known as a reversion (q.v.). Excepting in the case of an estate for years, which is capable of indefinite subdivision, a person cannot acquire the relation of a landlord by granting to another an estate of the same kind or quality as that which he himself possesses, even though it be limited so as to come to an end before the probable termination of the grantor's estate. Thus, a tenant in fee simple cannot grant lands in fee

simple to another so long as the grantee and his heirs continue to reside on the premises conveyed, retains no interest which can be called a reversion, nor does such a grant create a tenure between grantor and grantee. At the most the grantor in such a case has left only an indefinite interest, known as a "possibility of reverter."

The relation of landlord and tenant had its origin in the feudal system of land tenure, under which all freehold lands, including fees, were held of a superior lord. Under that system it was possible for a tenant in fee simple to grant the lands in fee simple to be held of himself, in which case he became the immediate feudal superior of his grantee. This practice of subinfeudation, as it was called, was abolished by the famous Statute Quia Emptores, enacted by the English Parliament in 1290, since which time the alienation of a fee divests the grantor of all his right and interest therein. But as this statute applied only to conveyances in fee, it left the way open for the various forms of tenure above described, by which the relation of landlord and tenant is still created. As has been stated, the tenant in fee simple who grants the land in fee tail or for life is the landlord of his grantee in precisely the same way as he is of a tenant for years, but in practice the phrase "landlord and tenant" is more commonly employed to describe the lastnamed relation.

As thus understood, the relation usually arises from an instrument of conveyance, known as a lease (q.v.), and the rights and responsibilities flowing therefrom are partly the result of positive law and partly of the agreements and stipulations embodied in the lease. Of the inherent legal incidents of the relation, perhaps the most important are the obligation of the landlord to protect the tenant's possession against all persons claiming a legal right to the premises, and the correlative obligation of the tenant to recognize his landlord's title. The former is violated by an eviction by the landlord or any one claiming under him or by one asserting a paramount title, the effect of which is to suspend the rent due by the lease and to give the evicted tenant an action for damages against his landlord. But the landlord is not bound to protect the tenant against trespasses or nuisances, his implied covenant for quiet enjoyment, as it is called, not extending to unlawful acts of third parties. Neither is the landlord bound to furnish a habitable tenement. He leases the land, with such improvements as happen to be thereon, and the tenant takes them as they are. It is no eviction of the tenant if, upon taking possession, he finds the premises uninhabitable. See EVICTION.

The tenant, on the other hand, is estopped from denying his landlord's title, or, in general, from setting up a title, either in himself or in another, adverse to that of his landlord, and that irrespective of whether the latter's title be good or bad. Neither can he, at common law, ever acquire a good title as against his landlord by any lapse of time. So long as he continues in possession he is held to the relation of a tenant and cannot get into adverse possession of the premises, so as to take advantage of the Statute of Limitations. This rule has, however, been generally modified by statutes permitting a tenant, after a certain length of time, or even, in a few States, by disavowal of his landlord's title, to acquire the status of an adverse possessor. In no case, however, can this be

done until the expiration of the term of the tenancy.

This duty of the tenant to refrain from denying his landlord's title is the modern survival of the feudal obligation of fealty, pledged by the vassal to his lord. Its most serious breach at common law consisted, not in the tenant's setting up the invalidity of the landlord's title in an action for the rent, nor yet in his assertion of an independent title, by adverse possession, but in the tortious or wrongful conveyance of the premises to a third person in fee. This was effected by one of the ancient modes of conveyance, as feoffment, fine, or common recovery, which had the curious effect of vesting in the grantee the actual estate which it purported to convey, even though this was greater than the estate of the grantor. This grave breach of the tenant's good faith was attended by the complete forfeiture of his own estate to the landlord whom he had thus betrayed. The abolition of tortious conveyances by statute has done away with this violation of the tenant's duty. See **FEOFFMENT**; **FORFEITURE**; **LIFE ESTATE**.

Among the other important incidents of the relation of landlord and tenant are the obligation of the tenant to refrain from committing waste on the premises, his right to cut wood for fire, for fencing and repairs, and other similar privileges, known as "estovers"; the right of a tenant for life or at will to the emblements or growing crops, and the right of a tenant under certain circumstances to remove fixtures which he has annexed to the freehold. The obligation of a tenant for life or years to keep the premises in repair is a direct consequence of his liability for what is known as permissive waste, which consists in permitting the premises to deteriorate with use. At common law this is carried so far as to compel the tenant to rebuild a house destroyed by accidental fire, but this extreme consequence of the doctrine of waste has generally been abrogated by statute in the United States. All of these rights and obligations flow naturally from the relation between the parties and do not depend upon agreement. See **EMBLEMENTS**, **ESTOVER**; **FIXTURES**; **WASTE**.

Other obligations of the parties are the result of agreements which, in the language of the books, "touch and concern the land." These are very numerous, the more usual ones being the obligation of the tenant to pay a stipulated rent, to refrain from assigning the lease without the landlord's permission, to make certain improvements, and the like; and, on the landlord's part, to renew the lease for a further term, to pay for improvements at the expiration of the lease, to permit the removal of fixtures not otherwise removable, etc. Rent is never due in the absence of an agreement, express or implied, but by statute an understanding to pay a reasonable rent for the use and occupation of leased premises may be implied in cases where the lease is silent on the subject. Where agreements of the kind above enumerated are embodied in a covenant, i.e., an instrument under seal, they become a part of the relation of landlord and tenant, and become binding, not only upon the original parties, as is the case with ordinary contracts, but extend to all those who may, during the continuance of the lease, succeed to the position of the original parties respectively. Such covenants are said to "run with the land." It is on this principle that a tenant's obligation to pay a certain rent is passed on to any one to

whom he may assign the lease, and the landlord's right to enforce the obligation passes, upon a sale of the land, to the grantee of the reversion.

Most of the obligations of landlord and tenant, whether inherent in the relation or contractual, are enforceable only by an action for damages. This is especially true of the obligations arising out of the agreements of the parties. In the absence of an express provision to that effect, there is, in general, no right on the part of the landlord to terminate the lease and eject the tenant for failure to pay rent or for any other breach of duty. This result can be attained only by incorporating in the lease a condition forfeiting the estate for a failure to perform the covenants thereof. This, however, is frequently done.

Under most circumstances the relations of landlord and tenant come to an end without notice. This is always true of estates for life and for years, and generally of tenancies at will and at sufferance. Estates from year to year, or from month to month, on the other hand, are a peculiar form of tenancy at will, terminable only at the end of a current period and then only upon due notice. But the estate of a tenant may come to an end in other ways than by effluxion of time. Apart from cases of forfeiture for waste, for felony, for breach of condition, and the like, leasehold estates are regularly terminated by the "release" of the reversion to the tenant, or by the "surrender" of the tenant's estate to his landlord. These are modes of conveyance operating only where there is "privity of estate" between the parties thereto and peculiarly appropriate therefore to the case of landlord and tenant. The result in either case is to produce what is known as a merger, the lesser estate disappearing in the greater and thus coming to an end. See **FORFEITURE**, **RELEASE**; **SURRENDER**; also **LEASE**; **LEASEHOLD**; **TENURE**. Consult the authorities appended to the article on **REAL PROPERTY**, and McAdam, *Rights, Remedies, and Liabilities of Landlord and Tenant* (New York, 1901); Taylor, *The American Law of Landlord and Tenant* (Boston, 1904); Fawcett, *Landlord and Tenant* (3d ed., London, 1905); Tiffany, *The Law of Landlord and Tenant* (St. Paul, 1910).

LAND OF BEUTLAH. A name occurring in Isa. lxii. 4 and given in Bunyan's *Pilgrim's Progress* to the region of peace where the pilgrims rest after their journey until called to cross the river of Death to the Celestial City; it typifies the Christian peace of mind after the trials of this life.

LAND OF NOD. A humorous designation of the state of sleep, from the name of the land mentioned in Genesis iv, where Cain dwelt after the murder of Abel.

LANDOIS, län'dwä', HERMANN (1835-1905). A German naturalist. He was born at Münster and educated there for the priesthood, which he entered in 1859, but afterward left to devote himself to scientific study and the popular presentation of natural history. He was made professor of zoology at the Academy of Münster (1873) and also head of the zoological museum. He wrote: *Tierstimmen* (1875); *Lehrbuch der Zoologie*, with Altum (5th ed., 1883); with Martin Krass, *Der Mensch und die drei Reiche der Natur* (part i, 14th ed., 1911; part ii, 11th ed., 1904; part iii, 8th ed., 1910); an equally successful *Lehrbuch für den Unterricht in der Naturbeschreibung* (part i, Zoologie, 8th ed., 1912;

part ii, *Botanik*, 7th ed., 1907; part iii, *Mineralogie*, 3d ed., 1908).—His brother, **LEONARD** (1837–1902), a German physiologist, was born at Münster and educated at Greifswald, where he took his degree in 1863 and became professor of physiology in 1872. He wrote on the blood, the pulse, and transfusion, on optical phenomena and electromagnetism, and published a valuable and successful *Lehrbuch der Physiologie des Menschen* (12th ed., 1909).

LANDOLT, län'dölt, EDMUND (1846–). An ophthalmologist, who was born in Aarau, Switzerland, and made Paris his permanent residence. He was educated at Heidelberg, Zurich, Vienna, Berlin, and Utrecht, and at Paris became an assistant in the university eye clinic. In the Franco-Prussian War he was at Héricourt with the Zurich ambulance service. In 1874 he returned to Paris, established an optical clinic and, with Javal, the *Laboratoire d'Ophthalmologie* at the Sorbonne. With Panas and Gayet, Landolt edited the important *Archives d'Ophthalmologie*, to which, as to the *Zeitschrift für Augenheilkunde*, he made valuable contributions. Among his many publications are *Leçons sur le diagnostic des maladies des yeux* (1877), *Manual of Examination of the Eyes* (1879); *Traité complet d'ophtalmoscopie*, with Wecker, *The Refraction and Accommodation of the Eye* (1882); *Vademecum of Ophthalmological Therapeutics*, with Gygax (1895), in French, English (1898), German, and Japanese versions.

LANDON, län'dôn', CHARLES PAUL (1760–1826). A French painter and author, born at Nonant. He studied under Regnault and won the Prix de Rome in 1792. He became successively painter to the Duc de Berri, corresponding member of the Institute, and conservator of the Louvre. While his paintings were much admired under the Empire, it is for his books that he will be remembered. Among them are: *Vie et œuvres des peintres les plus célèbres des arts* (25 vols., 1803–24), *Description de Paris* (1809–19); *Annales du musée et de l'école moderne des beaux-arts* (17 vols., 1801–08).

LANDON, LETITIA ELIZABETH (1802–38). An English poet—better known by her initials L. E. L.—born in Chelsea. In 1820 her first poem, "Rome," appeared in the *Literary Gazette*. She published several volumes of verse, the most widely read of which was the *Improvisatrice* (1824). She wrote three novels, of which the best is *Ethel Churchill* (1837). Consult Blanchard, *Life and Remains of Landon* (London, 1841), and *Poetical Works*, edited by W. B. Scott (ib., 1873). Her *Traits and Trials of Early Life* (1836) is supposed to be autobiographical.

LANDOR, län'dör, A. HENRY SAVAGE (1865–). An English traveler, writer, and artist. He was born in Florence, a grandson of Walter Savage Landor. After studying art in Paris he traveled in eastern Asia for several years and thereafter visited numerous countries of the other continents. In 1897 he reached both sources of the Brahmaputra River; later he explored central Mindanao Island, where he discovered the "white tribe" (Mansakas); in 1900 he accompanied the allied troops on the march to Peking, and with them entered Lhasa, the Forbidden City, and in 1902 went overland from Russia to Calcutta. During 1903 he visited some 400 islands in the Philippine and Sulu archipelagoes; in 1906

he crossed Africa in its widest part, a distance of 8500 miles, covered in 364 days; and in 1910–12 he crossed South America from Rio de Janeiro to Lima, traversing unexplored central Brazil and climbing the Andes. In 1914, after the return of Theodore Roosevelt from South America, Landor declared that the River of Doubt, which Roosevelt claimed to have discovered, did not exist. Later in the same year, at the beginning of the European War, Landor served as dispatch bearer for the Belgian government, his route being from Antwerp to Bordeaux, temporarily the French capital. His writings, largely illustrated by his own sketches, include *Along with the Harry Anu* (1893); *Corca* (1895), *In the Forbidden Land* (1898); *China and the Allies* (1901); *Across Coveted Lands* (1902); *The Gems of the East* (1904); *Tibet and Nepal* (1905); *Across Wildest Africa* (1908); *The Americans in Panama* (1910); *An Explorer's Adventures in Tibet* (1910); *Across Unknown South America* (1913).

LANDOR, WALTER SAVAGE (1775–1864). An English poet and prose writer, son of Walter Landor and of Elizabeth Savage, born at Ipsley Court, Warwickshire, Jan. 30, 1775. As a sturdy boy of 12, he was sent to Rugby, where he distinguished himself in Latin verse. Owing to an ungovernable temper, he was difficult to manage and was accordingly removed from Rugby at the advice of the head master. In 1793 he entered Trinity College, Oxford. Unconventional in his bearing, too pronounced in his Republican opinions, he got into difficulties there. For firing a gun at the window of a Tory undergraduate he was rusticated in 1794 and never returned. He quarreled with his father over the incident and was left to look after himself on an allowance of £150 a year. He now spent three years in Wales, where he wrote *Gebir* (1798), which shows the influence that Milton and Pindar were then exercising upon him. The poem was greatly admired by Coleridge, Southey, and the young Shelley, but it found no favor with the general public. Writing with almost equal facility in Latin, he made a Latin version of the poem (1803). On the death of his father, in 1805, he succeeded to the family estates and began squandering them at Bath. For a few months in 1808 he served under Blake in Spain, largely to gratify a dislike to the French which he had conceived on a visit to Paris in 1802. In 1809 he purchased the estate of Llanthony Abbey, in South Wales, where by his extravagance and quarrels he wasted a large part of his patrimony. In 1811 he married Julia Thuillier, the daughter of an unsuccessful banker. The marriage was particularly unfortunate. At this time appeared his *The Tragedy of Count Julian* (1811), which, though ill adapted to the stage, is impressive as a dramatic poem. Leaving his Welsh estate in charge of his mother, he settled first at Tours and then in Italy, where he lived mostly until 1835, occupying the Palazzo Medici in Florence and the Villa Chiusa in Fiesole. To this period and the years following belong the delightful *Imaginary Conversations* (1824–29); the *Citation and Examination of William Shakespeare . . . Touching Deer-Stealing* (1834); *Pericles and Aspasia* (1836); and *The Pentameron* (1837). In 1838 he settled in Bath, where he lived, with some interruptions, till 1858. In the meantime he had published his choicest poems, the *Hellenics* (1846), some of which were translations of Latin poems written

when a young man under the title *Idyllia Heroica* (1814, 1820). Best of them is "The Hamadryad." In 1858 Lander returned to Italy, eventually taking apartments at Florence. Here he was aided by Browning and visited by Swinburne. He died Sept. 17, 1864. Lander's was a powerful personality connecting the earlier and later poets of the nineteenth century. His poetry has never been widely read, but has almost invariably charmed the poets themselves. His prose, though uneven in quality, rises at times to magnificence. He was kind-hearted and chivalrous and made many friends as well as enemies. Consult his *Works*, with life by Forster (8 vols., London, 1876); *Letters and Other Unpublished Writings*, edited by Wheeler (ib., 1897), *Letters, Private and Public*, edited by Wheeler (ib., 1899); Sidney Colvin, *Lander*, in "English Men of Letters Series" (ib., 1881); Edward Dowden, in his *Studies in Literature* (5th ed., ib., 1889); Lillian Whiting, *The Florence of Lander* (Boston, 1905); W. A. Bradley, *Early Poems of Walter Savage Lander: A Study of his Development and Debt to Milton* (London, 1914).

LANDOUZY, lān'dōō'zē', LOUIS JOSEPH THÉOPHILE (1845-). A French physician, born at Rheims. He took part in the Franco-German War, graduated from the medical school in Paris in 1876, became an associate of its faculty in 1880, and professor of therapeutics and materia medica in 1893. He was elected to the French Academy of Medicine in 1913. He published *Sur la tuberculose infantile* (1875-88); *Sur les paralysies dans les maladies aiguës* (1880); *Recherches sur les causes de l'ataxie locomotrice progressive* (1882), the collaboration with Ballet which gained an Academy prize; *Sur la myopathie atrophique progressive* (1886), with Déjerine, and crowned by the Institute, *Les sérothérapies, leçons de thérapeutique et matière médicale* (1898); *Glossaire médical* (1902); *Hygiène sociale* (1908).

LANDOWSKA, lān-dōf'skă, WANDA (1877-). A Polish pianist, born at Warsaw. She received her musical education at the Warsaw Conservatory and from H. Urban in Berlin. Upon her appointment to the staff of piano teachers at the *Schola Cantorum* she settled in Paris in 1900. Her appearance in 1906 in an historical recital, when she performed on a cembalo old compositions written for that instrument, was so successful that she practically abandoned the piano and undertook extended tours of Europe as a cembalist. She wrote *Bach et ses interprètes* (1906) and *La musique ancienne* (1908).

LAND PLASTER. Gypsum (q.v.), when used as a fertilizer, is sometimes so called.

LAND RAIL. See CRAKE; RAIL; and Plate of RAILS, ETC.

LANDRETH, DAVID (1802-80). An American seedsman. He was born in Philadelphia and was the son of David Landreth, an Englishman, who in 1784 established in Philadelphia a nursery and seed house. David the younger became a partner in the firm and until 1828 was manager of the branch store in Charleston, S. C., which was confiscated by the Confederacy during the Civil War. He then succeeded his father as head of the firm in Philadelphia. From that time forward his leisure was devoted to writing and matters of public interest. He was one of the founders of the Philadelphia Horticultural Society, for which organization he

acted as corresponding secretary from 1828 to 1835 and was an active member of numerous other societies, notably the Philadelphia Society for Promotion of Agriculture and the United States Agricultural Society, in which he held the posts of president and vice president respectively. His most notable work, which appeared at Philadelphia in 1847, was the American edition of *A Dictionary of Modern Gardening*, an English work by Johnson.

LANDRY, AUGUSTE CHARLES PHILIPPE ROBERT (1846-). A Canadian legislator and author, born in Quebec. He graduated from Laval University, studied agriculture at St. Anne College, and devoted himself to farming. He was elected a Conservative member of the Dominion Parliament in 1878 and was again elected in 1882; in 1892 he was called to the Senate, of which body he was appointed Speaker in 1911. He served in the volunteer militia, in 1885 was made a lieutenant colonel, and colonel in 1907. He was elected president of the Quebec Exhibition Company in 1894 and president of the Council of Agriculture in 1896. His publications include papers on literary, political, and scientific subjects, and *Traité populaire d'agriculture théorique et pratique* (1878), *L'Italie, ses beautés et ses souvenirs* (1880), *L'Eglise et l'État* (1883); *Les six raisons du Dr. Verge contre le cercle catholique de Québec* (1884).

LANDS, PUBLIC. That part of the national domain, in the ownership of the government, subject to sale or other disposal under general laws. These lands lie within both the States and the Territories. They have been acquired for the United States chiefly by cession from the individual States and by treaties with foreign nations. At the time of the adoption of the Articles of Confederation, in 1781, the entire national domain was either erected into States or claimed by the individual States as unorganized territory. Under the Articles of Confederation the States were induced to cede their claims to Western territory to the United States. New York in 1781, Virginia in 1784, Connecticut in 1785, and Massachusetts in 1786, with some reservations, ceded to the general government their claim to the territory north of the Ohio River; the States south of Virginia soon followed their example. South Carolina in 1787, North Carolina in 1790, and Georgia in 1802 ceded their claims to lands lying to the west of their limits, so that within a short time after the adoption of the Federal Constitution the United States had come into possession of an immense Western domain. Administration of this domain became one of the important functions of the general government. Perhaps the most notable piece of legislation enacted by the Congress of the Confederation related to the government and disposal of the public lands lying north of the Ohio River. (See NORTHWEST TERRITORY.) The Federal Constitution, adopted in 1789, conferred upon Congress the power to make all needful rules and regulations respecting the territory and other property belonging to the United States, thus making the national legislature the sole authority for the control of the public lands. After the North Carolina and Georgia cessions, the first increase of the public domain came as a result of the Louisiana Purchase of 1803, which, if it included Oregon, as the Land Office has always claimed, amounted to 1,003,216 square miles. In 1812 Congress

claimed and asserted jurisdiction over about 9740 square miles of territory in Spanish West Florida. By the cession of Florida in 1819 about 54,000 square miles were added to the public domain. The public lands within the boundaries of Texas were retained by the State. As a result of the Treaty of Guadalupe Hidalgo (1848) the territory now embraced in the State of California and the territory then known as New Mexico were acquired. The Gadsden Purchase of 1853 brought an area of some 47,000 square miles, and finally Alaska, with 577,300 square miles, was acquired by treaty with Russia in 1867. In 1867 the territory thus acquired into States or Territories, the general government has often reserved large areas for special purposes or for such disposal as it may see fit. It is these areas that are popularly and officially known as the public lands of the United States. The legal title to land occupied by Indian tribes is regarded as being vested in the United States. According to the doctrine early laid down by the courts, the Indians have only a right of occupancy, subject to the power of the United States to extinguish the same either by conquest or purchase. The principle is that they are not absolute owners, but mere occupants, to be protected while in the possession of their lands and incapable of transferring the absolute title to any person or sovereign except that of the county in which they are domiciled. An important source of expense in the public-land policy of the United States has been the cost of extinguishing the Indian titles. Up to 1883 this item of expense had reached the amount of \$9,000,000. As the titles of the Indians have been extinguished, they have been settled upon by the government land embracing altogether nearly 40,000,000 acres.

The public lands of the United States have been disposed of in various ways. The principal method has been sale at a nominal price or gift to individual settlers and grants to States or corporations. Prior to 1801 it was the policy of the government to sell its public lands in large quantities by special contract, the result being an average sale of about 100,000 acres annually. Then followed a policy of selling on credit and in small lots, with the result that some 18,000,000 acres were disposed of. In 1820 the policy of selling for cash, but in lots to suit purchasers, was tried. Within 20 years some 76,000,000 acres had been sold as a result of this method. After the panic of 1837 the preemption system, to be described hereafter, was adopted, by which the most desirable lands were reserved for actual settlers at a low price. The homestead policy adopted in 1862 had the effect of reducing the sales to an average of 1,000,000 acres annually. Up to 1883 the total receipts from the sale of the public lands had reached the amount of \$233,000,000, although, according to a reliable authority, the actual cash outlay of the government in the purchase of foreign territory, the cost of extinguishing Indian titles, the expense of surveying, etc., exceeded this amount by \$126,000,000. One of the most common methods of disposing of the public lands was by grant to individuals on account of special services to the Republic, or to corporations for the purpose of aiding in the construction of railroads, or to the States for the encouragement of education or the building of roads and canals. Of the first class of grants may be mentioned the gifts of land to the Rev-

olutionary soldiers and to eminent individuals like Lafayette, who had rendered distinguished service to the nation. Of the 10,000,000 acres given away down to 1840, the greater part was in reward for military services either in the Revolution or the War of 1812. To reward the soldiers of the Mexican War, about 60,000,000 acres were appropriated by Congress. A few grants were made direct to educational and charitable institutions, but they were exceptions rather than part of a general policy. From 1842 to 1854 various Acts were passed granting quarter sections of land to actual settlers who would take up their residences on certain frontiers. About 3,000,000 acres were disposed of in this manner. Under the homestead policy adopted in 1862 and the similar timber-culture policy introduced in 1878, about 150,000,000 acres were taken up by private persons. The policy of making grants of public lands to the States was begun at an early time and has contributed largely to the depletion of the public domain. As early as 1802 a grant was made for public improvements in Ohio. Between 1824 and 1866 more than 4,000,000 acres were granted to five States for canal purposes. By an Act of 1850 all swamp and overflowed lands within the limits of any State were granted for the purpose of aiding in the construction of levees and drains. The policy of aiding in the construction of railroads by means of public-land grants began about 1850. In September of that year Congress made a grant to the State of Illinois to be applied to the construction of the Illinois Central Railroad. The grant consisted of alternate sections for six sections in width on either side of the road. At the same time grants were made to the States of Alabama and Mississippi to aid in the construction of the Mobile and Ohio Railroad to the Gulf. Between 1852 and 1872 similar grants, about 80 in number, were made to the States of Missouri, Arkansas, Minnesota, Wisconsin, Louisiana, and Florida for the purpose of subsidizing their principal railway lines.

As early as 1845 efforts had been made to secure the aid of the government in the construction of a transcontinental line to the Pacific. With the admission of California to the Union and the rapid development of the Far West the construction of a road to the Pacific became a political necessity. Between 1850 and 1862 the proposition to grant government aid in the construction of the line was a subject of frequent debate in Congress and was favored by both political parties in their national conventions. But between Iowa and California there were no States to which the grant could pass. Accordingly Congress voted a subsidy of public land to such corporations as would undertake the task of building the Pacific railroads. During the ensuing decade 20-odd grants, comprising an aggregate area of 155,000,000 acres, were made, some of which, however, reverted to the government on account of the failure of the railroads to fulfill the conditions under which the grants were made. A few grants for canals and wagon roads between 1863 and 1873 withdrew an additional 3,000,000 acres from the public domain, thus swelling the amount promised by the government to the grand total of 262,000,000 acres. A considerable portion of this, however, reverted to the government and was never patented. In addition to grants for internal improvements the States have received large gifts of public land for the encouragement of education. Those

admitted prior to 1850 received one-thirty-sixth of their area for school purposes. Those admitted since 1850 have received one-eighteenth for the same purpose—a total of nearly 70,000,000 acres. Each of the new States has also received a tract of from one to four townships for a university—a total of more than 1,000,000 acres. By the Act of 1862 Congress granted to each State a tract of land, whose area was proportioned according to its representation in Congress, for an agricultural college. As a result of this policy about 10,000,000 acres were lost to the public domain. The six States admitted to the Union in the period 1889–96 received the magnificent gift of 23,000,000 acres for schools, public buildings, and other purposes. As a climax to the munificence of Congress was an Act of 1902, setting aside all moneys received from the sale of public lands in 17 States and Territories as a special fund for the establishment of an irrigation system. This is expected to yield ultimately several hundred million dollars.

The different methods by which titles to public land may be acquired by private individuals are. (1) preemption, (2) homestead; (3) public auction or private sale; (4) bounty law or military land warrants; (5) under the Timber Culture Act. According to the Preemption Law, which was in force until recently, the applicant was required to settle upon the land, improve it, and reside there continuously for a period of six months. At the expiration of this period, upon furnishing proof of such residence and improvement and upon paying \$1.25 per acre, the preëmtor was entitled to a patent conveying him full title to the land. All public land belonging to the United States to which Indian title had been extinguished was subject to preemption under the conditions, restrictions, and exceptions provided by law. The principal exceptions were lands expressly reserved by law or proclamation of the President, lands included within the limits of an incorporated town or already selected as the site of a city or town, lands actually settled and occupied for purposes of trade or other business, and lands containing saline or mineral deposits. Every person who was the head of a family, every widow, and every unmarried person over the age of 21 years, being a citizen of the United States or having filed a declaration of intention to become such, was entitled to take advantage of the preemption laws, except that no person who was already the owner of 320 acres of land in any State or Territory, or who had abandoned his residence on his own land to reside on the public lands in the same State or Territory, was entitled to the right in question. The preemption system is said to have originated from the necessities of settlers and through a series of more than 57 years of experience in attempts to sell or otherwise dispose of the public lands. The early idea of sales for revenue was abandoned, and a plan of disposition for homes was substituted. The preemption system was the result of long experience, executive orders, departmental rulings, and judicial construction.

Under the Homestead Law, enacted in 1862 and since variously amended, the applicant "enters" upon the land (not exceeding 160 acres), improves it, and resides there continuously for a period of five years. After the expiration of this period, and upon making proof of such residence and improvement, he is entitled to a patent without the payment of money, except a

nominal fee. Any person qualified to take advantage of the Preemption Law is eligible to enter land under the homestead acts, while the lands subject to homestead are the same as those subject to preemption. Under the homestead policy more than 85,000,000 acres of land have passed from the public domain to the possession of private individuals. (See HOMESTEAD LAWS.) The homestead policy is now the approved method of disposing of the public lands. It does not offer the same opportunity for fraud that some of the other methods have shown and has produced the most satisfactory results ever obtained from a national system of land distribution. According to the third method of acquiring title to public land, the President, by order or proclamation, announces that certain lands will be open to public auction at a certain time and continue open for a specified period, during which time they will be sold to the highest bidder for cash, the minimum price being fixed at \$1.25 per acre. Such portions as remain unsold at the expiration of the period of sale are held for private entry and sale. According to the fourth method, certain soldiers or members of their families are given military land warrants entitling them to a specified part of the public lands, and upon presentation to the proper officer of such warrants the holder is entitled to enter upon so much of the public domain without payment of money, unless the land is held above the usual price. Finally, by the Timber Culture Act of 1878 it was provided that a person, upon proof that he had planted a certain number of acres of timber, was entitled to receive a patent for land not exceeding 160 acres occupied. This Act, together with the Preemption Law, has been repealed on account of numerous frauds growing out of their administration. At present the public lands of the United States are classified by the Land Office as *mineral* lands, which are chiefly valuable for their mineral wealth, and are usually reserved from preemption or homestead and sold at from \$2.50 to \$5 per acre; *timber and stone* lands, unfit for cultivation, but valuable otherwise, and usually sold at \$2.50 per acre; *saline* lands, salt springs, at first offered at public sale to the highest bidder at not less than \$1.25 per acre; *town-site* lands, sold at \$1.25 per acre; *desert* lands, sold at the same price and in lots not exceeding 320 acres; *coal* lands, sold usually at from \$10 to \$20 per acre, according to their distance from a completed railroad; and *agricultural* lands, sold everywhere at \$1.25 per acre. From 1854 to 1862 there was a class of *graduated* lands, consisting of parcels which had long remained unsold and were offered to adjoining settlers at very low prices.

The management of the public lands is intrusted to a bureau of the Interior Department known as the General Land Office, at the head of which is a commissioner appointed by the President with the advice and consent of the Senate. This office was created in 1812 and took over the various duties relating to the management of the public lands, which had previously been managed by officers in the departments of State, Treasury, and War. The Land Office constituted a bureau in the Treasury Department until 1849, when it was transferred to the new Department of the Interior. The commissioner is charged with a series of duties relative to the surveying and sale of the public lands, such as relate to private claims for lands

and the issuing and recording of patents for all grants of land of whatever character made under the authority of the United States. Local land offices are established in the various States and Territories where the amount of unsold public land exceeds 100,000 acres. For each land office a register and a receiver are appointed, whose duties are to transact the business relating to the public lands in their districts. The registers receive applications for land, file receipts, and on final payment give to the purchaser a certificate which entitles him to a patent or deed from the United States. Formerly the patents were signed by the President of the United States, but that practice was abandoned, and at present they are signed by a secretary and countersigned by the recorder. It is the duty of the receiver to receive money or land scrip from the purchaser and to issue receipts therefor. Registers and receivers are appointed by the President and hold office for four years. All proceedings for the acquirement of public lands are to be made before these officers, and they are empowered to pass upon all claims relating to land within their districts, their decisions, however, being subject to review by the Commissioner of the General Land Office. Besides these officers there are some 17 surveyors-general—one for each of the surveying districts into which the public domain is divided. Under their direction the public lands are surveyed and described and thus made ready for sale. Another important official of the General Land Office is the recorder, likewise appointed by the President, and charged with countersigning and recording patents. The Commissioner

erment reserves and the unappropriated domain. The rectangular system of surveying the public lands was early adopted by the government and was first practiced in southeastern Ohio under the direction of Thomas Hutchins, geographer of the United States. This system provides for the division of the lands into ranges, townships, sections, and quarter sections. The ranges are bounded by meridian lines 6 miles apart and numbered east and west from a principal meridian. These are divided into townships 6 miles square, numbered north and south from a given parallel. The townships are subdivided into 36 sections, each 1 mile square, and these are again subdivided into quarter sections. See ALASKA; GOVERNMENT LAND.

Canada. The crown or public lands signify that portion of the Canadian domain held by the Dominion and provincial governments for sale or other disposal according to law. The words "ownership of the government" cannot properly be applied to such lands in the sense in which they are applied to the public lands of the United States. On the contrary, whenever Canadian public land or its incidents are described as the property of or belonging to the Dominion or a province, it is meant only that the right to its beneficial use, or to its proceeds, has been appropriated to the Dominion or the province, as the case may be, and is under the control of its legislature, the legal title to the land itself being vested in the crown. In the history of the British provinces which were formed into the Dominion in 1867 the disposal of public lands played an important part, causing needed reforms. Lavish grants were often made by government officials to political favorites, or the lands when sold or leased were subjected to vexatious conditions or dues. They were, however, gradually brought within the course of British law and custom as established at the accession of George III, and passed under control of the legislatures in return for the assumption by the latter of a civil list to meet the expenses of government. The public lands administered by the Dominion are situated in Manitoba, Saskatchewan, Alberta, and the railway belt extending 20 miles on each side of the Canadian Pacific Railway in British Columbia. Those administered by the provincial governments are in Ontario, Quebec, Nova Scotia, and New Brunswick. The total area of Dominion lands in Manitoba, Alberta, and Saskatchewan in 1914 was approximately 446,068,798 acres, and up to Jan. 1, 1914, 189,073,928 acres of Dominion lands had been surveyed and 163,373,928 acres had been alienated, leaving about 25,700,000 acres still to be disposed of. Of the unsurveyed area in the three provinces about 86,000,000 acres were fit for agriculture, and about half of this amount was equal in fertility to the settled areas. The lands are in townships of 36 sections, each section consisting of four quarter sections of 160 acres each. Patents for free homesteads for settlers are issued on proof that the settler is a British subject, has resided on his homestead for at least six months in each of three years, has built a habitable house thereon, and broken 30 acres of his holding. Grazing leases of Dominion lands of a maximum area of 100,000 acres are obtainable to a certain extent.

There are no public lands in Prince Edward Island, none free in Nova Scotia, but in New Brunswick the virgin lands are granted practically free. There are over 7,000,000 acres, of

PUBLIC LANDS

Statement prepared by General Land Office, June 30, 1913

AREA UNAPPROPRIATED AND UNRESERVED

STATE OR TERRITORY	Surveyed acres	Unsurveyed acres	Total
Alabama	77,600		77,600
Alaska		367,963,823	367,963,823
Arizona	11,760,267	27,774,928	39,535,195
Arkansas	397,489	70,000	467,489
California	15,033,304	5,220,333	20,253,637
Colorado	17,787,548	1,565,683	19,353,231
Florida	202,896	155,531	358,417
Idaho	7,748,512	10,167,110	17,915,622
Kansas	92,568		92,568
Louisiana	78,014		78,014
Michigan	89,057		89,057
Minnesota	1,286,394		1,286,394
Mississippi	41,660		41,660
Missouri	713		713
Montana	10,977,501	10,565,352	21,542,853
Nebraska	405,469		405,469
Nevada	29,359,141	25,779,452	55,138,593
New Mexico	20,927,792	10,370,829	31,298,621
North Dakota	1,156,120		1,156,120
Oklahoma	41,636		41,636
Oregon	13,613,442	2,932,080	16,545,522
South Dakota	3,751,651	53,781	3,805,432
Utah	12,290,342	21,547,254	33,837,596
Washington	1,079,957	670,251	1,750,208
Wisconsin	9,880		9,880
Wyoming	30,405,454	1,850,225	32,255,679
Grand total	179,204,397	486,686,632	665,891,029

of the General Land Office makes an annual report to Congress of the work of his office, including statistics of land surveys and sales. These volumes contain a vast amount of descriptive and statistical information concerning the public lands of the United States and are often accompanied by valuable maps showing the gov-

which lumber companies have leased large areas. The conditions for free lands to settlers are easier than those of Dominion lands in the Northwest. In Ontario nearly all the free lands, except in the new district of Patricia, have been taken up; but large areas in northern or New Ontario were in 1914 held at 50 cents per acre. In Quebec on June 13, 1913, there were 7,129,062 acres held for sale or free grants. In 1913 the sales of land by the Hudson's Bay Company and by railway companies having government land grants amounted to \$9,867,155 for 707,149 acres. There were, in 1913, 31,499 ordinary homestead entries for Dominion lands, 6483 pre-emptions, and 789 purchased homesteads under the Dominion Lands Act. Information as to Dominion lands is obtainable from the Department of the Interior, Ottawa, and as to provincial lands from the different provincial governments.

LANDSBERG, MAX (1845-). An American rabbi. He was born at Berlin, Germany, was educated at the universities of Göttingen, Breslau, and Halle (Ph.D., 1866), and at the Jewish Theological Seminary, Breslau, and was ordained a rabbi in 1870. From 1871 to his retirement in 1915 he was minister of Berith Kodesh Congregation at Rochester, N. Y. He served as governor of the Hebrew Union College at Cincinnati, Ohio, and in 1911 as president of the New York State Conference of Charities and Correction. He published a *Ritual for Jewish Worship* (1884; 3d ed., 1910).

LANDSBERG-AN-DER-WARTHE, länts-bërk-än-dër-vär'te. A town in the Province of Brandenburg, Prussia, on the Warthe, 40 miles northeast of Frankfurt-on-the-Oder (Map: Prussia, F 2). It contains a theatre, a museum, and a Gymnasium. The chief manufactures are machinery, boilers, cordage, sacking, lumber, furniture, bricks, starch, wire rope, shoes, sugar, cabinetwork, and leather. There is good trade in grain, cattle, lumber, and sparkling wine. It was founded in 1257. Pop., 1900, 39,339.

LANDSCAPE. In painting, a picture representing natural scenery, with or without accessories of men and animals, which must be subsidiary. The modern feeling for landscape was unknown to Greek art, the human figure absorbing all attention. It was not awakened until Alexandrine times, and in the Roman epoch both landscapes and marines were common. The principal examples are the *Odyssey* landscapes (Vatican), found upon the Esquiline Hill, and some of the mural decorations at Pompeii and Herculaneum. In Byzantine art and during the Middle Ages there was little sense of landscape, gold backgrounds being used for the religious pictures. But with the dawn of the love of nature which came with St. Francis of Assisi and culminated in the art of Giotto, the landscape again entered art, although in a purely decorative fashion, as a background for frescoes or panels.

The first effective use of landscapes as backgrounds was made in the Netherlands by the brothers Van Eyck (c.1400), who through the medium of their oil technique rendered admirably the effects of light and atmosphere. This practice was continued by their followers, especially by those artists born in Holland, like Gerard David, who brought the landscape to the greatest perfection attained during the fifteenth century. In Germany the school of Co-

logne used idyllic landscapes as backgrounds. The work of the succeeding painters resembled the Flemish, which they followed, but was cruder. It culminated in the admirable realistic drawings of Dürer and in the more fantastic productions of his pupil and follower Albrecht Altdorfer.

In Italy Fra Angelico was the first to paint what can be proved to be a landscape from nature. Early in the fifteenth century the Florentines discovered linear perspective, of which Filippo Lippi made use in idyllic backgrounds. Baldovinetti and Pollaiuolo attempted to apply absolute naturalism to the landscape. The usual theme of the Florentine school was some vale of the Arno. The effects of atmosphere were not discovered until the time of Verrocchio, after the middle of the century, they were further developed by Leonardo. The central Italians excelled the Florentines in landscape backgrounds, depicting the spacious hills and dales of central Italy. Piero della Francesca, founder of the school, excelled all of his day in painting light and atmosphere, and his principles were further developed by Perugino in the sixteenth century, and by Raphael, in whose paintings the Umbrian landscape culminated. By his treatment of light and shadow, Correggio lent the landscape a subtle charm. The most important contribution, however, was made by the Venetians in depicting the effects of sunlight and atmosphere. This was done especially by the Bellini and by Giorgione, in whose work the landscape assumes equal importance with the figures. Titian treated landscape still more independently, giving it an ideal and heroic character and becoming the father of the so-called classic landscape. The Carracci and other Eclectics developed this phase even further, painting landscapes independent of figures. The classic landscape found its culmination in the seventeenth century at Rome, in the works of Nicolas and Gaspar Poussin, and especially of Claude Gellée (Lorrain). Its cardinal principle was that the subject must be classical—the Roman campagna or similar scenery, usually with ancient ruins or mythological figures. It laid especial emphasis on composition, the landscape being composed from studies after nature, and affected a radiant golden color scheme. Except in the Netherlands, it became the chief type of landscape, with representatives in many countries. Of a somewhat different character, wildly romantic but more naturalistic, was the contemporary work of Salvator Rosa in the south.

Meanwhile landscape art of quite a different character had arisen during the seventeenth century in the Netherlands. The transition from religious backgrounds to the independent landscape, which took place in the later sixteenth century, was a gradual one. At first a biblical theme was used as an excuse for the landscape, such subjects as the "Flight into Egypt" being especially popular. One of the first to paint independent landscapes was the Fleming Peter Bruegel the Elder. Soon a differentiation was apparent in Flanders and Holland, the latter achieving the most important development of the seventeenth century. It substituted beauty of tone for the brightness of color affected by the earlier and later Flemish schools, and depicted chiefly the water and woodland landscape of Holland. There were no classic reminiscences, but much truth to nature and profound poetic sentiment. The most important pioneer was the

little-known Hercules Segers, whose romantic and poetic landscapes have often been confounded with Rembrandt's. The most important of the earlier masters were Van Goyen and Salomon Ruysdael, painters of river and canal scenes, and Aert van der Neer, painter of moonlight and sunrise effects. The art culminated in the poetic and elemental landscapes of Rembrandt, the versatile but gloomy grandeur of Jacob Ruysdael, foremost of Dutch landscape painters, and in the sunny placid woodland and mill scenes of Hobbema. The cattle painter Albert Cuyp was primarily a landscapist of sunny river scenes, and so were Wouvermann and to a less degree Paul Potter. There was also a goodly array of marine painters. Landscape painting during the seventeenth century in Flanders was not so rich nor so varied as in Holland. Rubens painted landscapes of powerful design, bright color, and exuberant light effects. Brouwer's fine impressions of nature, with delicate light and atmospheric effects, were rather Dutch than Flemish in character. In the eighteenth century landscape painting, generally speaking, declined in Europe, although in France the painters of the rococo—Watteau, Boucher, Fragonard, and others—painted delightful decorative landscape settings for their genre pictures. In Great Britain the Welshman Richard Wilson, the so-called "father of British landscape painting," painted in the manner of Claude, while at Venice Guardi and Canaletto depicted, with fine tonal and coloristic effects, the charms of their home; in the Far East the Japanese painted fine decorative representations of nature simplified.

The impetus to the modern development of landscape painting came from England. A great forerunner was Gainsborough in the eighteenth century, but the two chief representatives were Turner and Constable in the early nineteenth. The former, influenced by Claude, represented the classical side and in his treatment of light effects anticipated the Impressionists. The latter's great innovation was the use of fresh natural colors and the selection of English scenes. Influenced partly by his achievements, but more by the study of the Dutch masters, a powerful and influential group, the painters of Barbizon (q.v.) arose in France. Just before this the Romanticists had somewhat improved upon classic tradition in France, making the landscapes glad or sad, according to the figures and action represented. The great contribution of the Barbizon painters (Rousseau, Corot, Dupré, Diaz, Daubigny, Millet, and Troyon) was the union of a sound naturalism with profound poetic sentiment. By his absolute realistic portrayal of nature Courbet prepared the way for Impressionism; a further impulse towards brighter color came from the Orientalists (Decamps, Fromentin, Ziem). The latest manifestation of the landscape, Impressionism (q.v.), is chiefly concerned with the rendition of light, and with its optical effect on the appearance of natural objects. The influence of the great landscapists of that school, such as Monet, Renoir, Pissarro, Sisley, etc., has transformed the art the world over, raising the entire pitch of color. Except in the works of Cézanne, Van Gogh, less so in those of Gauguin, Postimpressionism (q.v.) can hardly as yet be said to have achieved important results in the landscape. In the remaining European countries landscape painting experienced a development similar to that in France. The French influence—first the Barbi-

zon, then the Impressionist—has been everywhere determinative. Mention should be made of the powerful Glasgow school and the Newlyn (Cornwall) school in Great Britain, and of the Neu-Dachau and Worpswede groups in Germany. Chiefly under French influence important schools of landscape have arisen in all the Scandinavian countries, as is also true of Holland, although here there is a closer connection with the past.

The earliest development of landscape painting in the United States was in the second and third quarters of the nineteenth century—the so-called Hudson River school (q.v.). Its subjects were usually grand or romantic scenery of a panoramic character, painted with inordinate detail; but the school culminated in the excellent art of Inness, Wyant, and Homer Martin. These men were affected, though independently, by the painters of Barbizon, who have exercised the greatest of all foreign influences upon the American school. For, like them, American painters are mood painters and cherish beauty of tone rather than brightness of color. Blakelock, Dearth, Bunce, Crane, Birge Harrison, Ranger, Metcalf, Tryon, Ochtman (to mention a few), illustrate the point. Impressionism has been another powerful influence in the works of Theodore Robinson, Twachtman, Childe Hassam, and others. The present tendency is rather towards strength than subtlety of conception and execution. This is especially seen in the snow scenes of Schofield and Redfield, and the landscapes of the younger men, like Bellows. Nor should the group of marine painters be forgotten. Foremost among these stands Winslow Homer, a typical American, independent of all foreign influence; and among its other members are Carlsen and Waugh. But in America as in Europe the former distinction between figure and landscape painting is no longer clearly defined. Typical examples of this tendency are the American Whistler, whose decorative, tonal landscapes exercised a wide influence, Sargent, and Robert Henri.

Bibliography. No satisfactory account of the history of landscape painting has yet been written. The best manual thus far is Michel, *Great Masters of Landscape Painting*, translated from the French (London, 1910). Consult also: Gilbert, *Landscape in Art before Claude and Salvator* (ib., 1885); P. G. Hamerton, *Landscape, with Original Etchings and Illustrations from Pictures and Drawings* (ib., 1885); Ruskin, *Lectures on Landscape* (ib., 1897). For ancient landscape painting, consult Woermann, *Die Landschaft in der Kunst der alten Völker* (Munich, 1876). For the Italian: Zimmermann, *Die Landschaft in der venezianischen Malerei bis zum Tode Tizians* (Leipzig, 1893); Kallab, "Die toscanische Landschaft im 14. und 15. Jahrhundert," in *Jahrbuch der Kunstsammlungen des allerhochsten Kaiserhauses* (Vienna, 1900); Guthmann, *Die Landschaftsmalerei der toskanischen und umbrischen Kunst von Giotto bis Rafael* (Leipzig, 1902); E. G. Salter, *Nature in Italian Art: A Study of Landscape Backgrounds from Giotto to Tintoretto* (London, 1912). For the Netherlands: Kundall, *Landscape and Pastoral Painters of Holland* (London, 1891); Schubert-Soldern, *Von Jan van Eyck bis Hieronymus Bosch* (Strassburg, 1903); De Jongh, *Het hollandsche Landschap* (The Hague, 1903); Bode, *Great Masters of Dutch and Flemish Painting* (London, 1909). For Germany: Höhn, *Studien*

zur Entwicklung der Münchner Landschaftsmalerei (Strassburg, 1909); Brand, *Anfänge der deutschen Landschaftsmalerei im 14. und 15. Jahrhundert* (ib., 1912). For the French: Lanoe et Brice, *Histoire de l'Ecole française du Paysage* (Paris, 1901). For Great Britain: Holme, *Masters of English Landscape Painting* (New York, 1903); Scott, *Our British Landscape Painters* (London, n. d.). For the United States: Samuel Isham, *History of American Painting* (New York, 1907). Good practical manuals on landscape painting from the artist's point of view are by Birge Harrison, *Landscape Painting* (New York, 1909), and Alfred East, *Art of Landscape Painting in Oil Colour* (London, 1911).

LANDSCAPE GARDENING. The art of arranging trees, shrubs, flowers, and grass, drives and walks, and buildings, in such relation to the natural surroundings of a place and to one another as to produce pleasing effects. The ancients practiced it, but very little is known about the styles in vogue among the different peoples. From the early times of the Christian era to the thirteenth century the art was mainly practiced in the adornment of walled gardens of no great size, connected with castle or convent; this because of the insecure state of the open country. Then for several centuries it received special attention from the nobility, especially in Italy; and then by the popes in their great villas; later by Louis XIV at Versailles, and in some most magnificent parks around royal castles. To-day it is chiefly employed in adorning the parks and cemeteries of cities and the quiet surroundings of individual homes. At the present time landscape gardening is represented by two very distinct systems or styles—the one known as the geometric or formal style, in which regular forms and exact balance of part with part prevail, and the other opposed to this, with an entire absence of fixed patterns, known as the English or natural style. The English style, which is comparatively recent, received its name on the continent of Europe from the fact that it is the popular system of landscape gardening in Great Britain, this resulting from the common reservation there of great open parks, with ancient trees and sheep or deer, the whole left in almost complete wildness. The geometric style dates back to the Romans, and evidences of it still exist in Rome in connection with ancient villas. In general, historical data show that in early times the style of landscape gardening was formal, the flower beds and trees, the alleys and avenues forming regular geometrical lines and figures. Thus, when pleasure grounds were first laid out, they exhibited only geometrical forms, with buildings of various kinds, terraces, mounds, artificial hills, lakes, and streams. The hedges, trees, and shrubs were clipped and pruned, and sometimes trimmed into fantastic shapes, such as figures of animals, vases, and the like. This method of trimming, when carried so far as to give definite shape to trees, is now rarely practiced. It was called topiarian art, and the artist was known as the topiarius. From the time of Charlemagne to the seventeenth century many beautiful parks, all on the formal plan, were laid out in France; but at the close of that period the celebrated French landscape gardener Lenôtre began the development of what has been called of late the French style. The plan of this system was still geometric and differed mainly in its application on a larger scale

instead of the minuter detail so common in the older gardens. This style adapts itself admirably to palaces and large public buildings. The park at Versailles, in France, is a model of this system and a standing monument to Lenôtre.

During the second half of the nineteenth century the natural style had almost entirely supplanted the regular or formal in park construction and other phases of landscape architecture. In this system the rigorously straight lines and patterned figures are abandoned. The walks are winding and irregular, and the trees or groups of trees, shrubs, and flowers are scattered in imitation of natural scenes. Here graceful effects are intended to replace the often stiff regularity of the geometric arrangement. This style also is applicable to small as well as to large grounds. Around residences which have but small grounds it is used in hiding buildings, walls, etc., by massing the trees and shrubs, but leaving such breaks in the planting as to enable the passer-by to see the open greensward, which occupies the entire middle portion of the yard. The trees are also arranged with regard to the views from the windows beyond the premises. It is easier, however, to obtain harmony on a large space, and it is under such circumstances that the natural style appears in all its beauty. The vistas, walks, and roadways are all important and require careful consideration. The walks and drives are generally not supposed to be decorative and are made as little apparent as possible. The branching of the roads and walks follows graceful curves, the right angle being always avoided. On small grounds the walk usually surrounds a central open grass plat, with the trees and shrubs on the other side massed into a framework to complete the picture. If walks are laid across the lawn, however, they are laid sometimes below the level of the grass surface in order to hide them as much as possible. The use of flowering plants in connection with this style is confined to natural grouping of different combinations, according to the effects desired. The groups located at a distance from the principal points often form large masses of a single bright color, while those nearer by represent a mixture of harmonious shades. In all instances the plants are selected with reference to the purposes intended. In districts where the general scene exhibits a succession of rectangular fields, and where everything has evidently been reduced to a condition subservient to utility, a greater irregularity gives pleasure, and the eye loves to rest on any portion of the landscape which seems to exhibit the original beauties of nature. The landscape gardener, however, must not attempt an exact imitation of nature, or try to reduce everything to a state of primitive wildness. Like the painter, he must seek to exhibit nature idealized.

The present trend of landscape gardening in the United States is towards the production of effects with the minimum of artificial design or planting. The desirability of garden furniture and equipment, such as fountains, sundials, pergolas, and the like, is recognized, but they are being adapted more strictly to the locality, the surrounding scenery, and the architectural style of near-by buildings. The public parks of the United States furnish some of the best models of landscape gardening on a larger scale. The cemeteries of nearly all of the larger American cities have also been designed to produce natural effects in landscape gardening, and, al-

though numberless monumental tributes to the dead must necessarily be conspicuous features of the scene, they are the most beautiful works of their kind in the world. American trained landscape gardeners and architects have done much towards the utilization of native trees and plants showing distinctive characteristics. They have been ably supported by the pictorial gardening press of the country, so that at the present time foreign shrubs and plants set in stiff conventional design are giving way to native materials, with natural simplicity as the keynote. This is true in public work, as also in the development of the rapidly increasing suburban communities and private estates, large and small. Among important works now in progress may be mentioned the Botanical Garden for Brooklyn, N. Y., the development of South Philadelphia, including League Island Park; public playgrounds in Boston, Mass., and New London, Conn.; a park system and civic centre for Denver, Colo.; parks and playgrounds for Little Rock, Ark., and Schenectady, N. Y.; the Arroyo Seco Parkway, at Los Angeles, Cal., for which the land alone was to cost \$1,100,000; parks in Buffalo, N. Y.; South Shore Park for Milwaukee, Wis.; and a park system for Gary, Ind. Many other small towns have plans of the same kind under consideration. The so-called "garden suburb" is a recent development near the larger cities, and of those which have been undertaken and partly completed in 1915 may be mentioned Forest Hills Gardens, N. Y.; Torrance, an industrial town near Los Angeles, Cal.; and Neponset Garden Village, a copartnership housing plan at Walpole, Mass.

The subject of landscape gardening has been formulated for teaching, and courses in it are offered at the agricultural colleges and many other institutions. The laying out of grounds and plantings has become a calling, distinct from the work of the skilled gardener.

Bibliography. The following are some of the principal works on this subject: Samuel Parsons, *Landscape Gardening* (New York, 1891, new ed., ib., 1904); M. van Rensselaer, *Art out of Doors* (ib., 1893); Platt, *Italian Grounds* (ib., 1894); Rose, *Lawns and Gardens* (ib., 1897); Samuel Parsons, *How to Plan Home Grounds* (ib., 1898); S. T. Maynard, *Landscape Gardening as Applied to Home Decoration* (ib., 1899); L. H. Bailey, *Garden Making* (ib., 1900); Loring Underwood, *The Garden and its Accessories* (Boston, 1906); Humphrey Repton, *Art of Landscape Gardening*, edited by J. Nolen (ib., 1907); Alice Lounsberry, *Gardens near the Sea* (New York, 1910); Edward Kemp, *Landscape Gardening: How to Lay out a Garden*, edited, revised, and adapted to North America by F. A. Waugh (4th ed., ib., 1911); Wilhelm Miller, *What England can Teach us about Gardening* (Garden City, N. Y., 1911); Grace Tabor, *Landscape Gardening Book* (New York, 1911); Samuel Parsons, *Landscape Gardening Studies* (ib., 1912); F. A. Waugh, *Landscape Beautiful* (ib., 1912); id., *Landscape Gardening* (ib., 1913); L. H. Bailey (ed.), *Standard Cyclopaedia of Horticulture* (2 vols., ib., 1914); J. D. Sawyer, *How to Make a Country Place* (ib., 1914); Root and Kelley, *Design in Landscape Gardening* (ib., 1914); Samuel Parsons, *Principles and Practice of Landscape Gardening* (ib., 1915). Among European works, consult Humphrey Repton, *Observations on the Theory and Practice of Landscape Gardening* (London, 1793); Robinson,

Parks, Promenades, and Gardens of Paris (ib., 1869); id., *The English Flower Garden* (ib., 1883); Amherst, *History of Gardening in England* (ib., 1885); Wilhelm Miller, *Charm of English Gardens* (ib., 1911); H. I. Triggs, *Garden Craft in Europe* (ib., 1913); W. P. Wright, *Garden Trees and Shrubs* (ib., 1913); W. H. Godfrey, *Gardens in the Making* (ib., 1914); André, *L'Art des jardins* (Paris, 1879); V. A. Gressent, "Parcs et jardins, traité complet de la création des parcs et des jardins," in his *Les classiques du jardin*, vol. iii (ib., 1908); Fouquier, *De l'art des jardins* (ib., 1911); Jaeger, *Lehrbuch der Gartenkunst* (Leipzig, 1877); id., *Gartenkunst und Garten, Sonst und Jetzt* (Berlin, 1887); Meyer and Ries, *Gartentechnik und Gartenkunst* (2d ed., Leipzig, 1911); Leberecht Migge, *Die Gartenkultur des 20. Jahrhunderts* (Jena, 1913); Hugo Koch, *Gartenkunst im Städtebau* (Berlin, 1914); M. L. Gothein, *Geschichte der Gartenkunst* (2 vols., Jena, 1914). See PARK; HORTICULTURE; LAWN.

LANDSEER. A family of English painters and engravers, the most important of which was Sir Edwin Landseer (q.v.).—The father of the family, JOHN (1769-1852), engraver and author, was born in Lincoln. He illustrated a number of works, his plates being chiefly landscapes. The most interesting are a few plates after Turner, the best being probably the "Cascade at Terne." In 1806 he was made associate engraver of the Royal Academy, and in the same year he delivered a series of lectures on engraving before the Royal Institution (published in 1808). He endeavored in vain, through memorials to the Academy and a petition to the House of Commons, to have engraving placed upon the same footing in the Academy as in foreign countries. Disappointed in this, he turned his attention to archaeology, publishing several works. He was a fellow of the Society of Antiquaries and engraver to the King. His three sons became famous.—THOMAS LANDSEER (1795-1880), the eldest, was an engraver. He was born in London and was a pupil of his father and of Benjamin Haydon. He spent most of his life engraving on steel from his brother Edwin's animal pictures. His engravings are faithful and sympathetic reproductions, often full-sized copies of the original paintings. Among his other works is the engraving of Rosa Bonheur's "Horse Fair." The Bibliothèque Nationale in Paris contains an album of his designs and sketches, which indicate high talent. He was author of the *Life and Letters of William Bewick* (1871).—CHARLES LANDSEER (1799-1879) was an historical painter. He received his first instructions in art from his father and from Benjamin Haydon and entered the school of the Royal Academy in 1816. Four years later he accompanied Lord Stuart de Rothesay on a mission to Brazil, where he made a large number of drawings and sketches for Dom Pedro I. He first exhibited at the Royal Academy in 1828, was elected an academician in 1845, and was keeper of the Academy (1851-73). Among his paintings the most important are: "Clarissa Harlowe in the Pawnshop" and "Sacking of Basing House," National Gallery, London; "Pillaging of a Jew's House," "Cromwell at Naseby," National Gallery, Berlin, "The Departure of Charles II from Bentley"; "The Eve of the Battle of Edgehill."

LANDSEER, SIR EDWIN HENRY (1802-73). An eminent English animal painter. He was

born in London, March 7, 1802. Under his father's guidance he sketched animals in the fields about London before his fifth year, and before he was 12 he could etch and paint in water colors and oil. Some of these earliest efforts are preserved in South Kensington Museum. He won the silver palette and three medals of the Society of Arts (1813-16) and made his debut at the Royal Academy Exhibition in 1815. Although he seems to have profited from the advice of Haydon in 1815, he was not among the latter's pupils, and in 1816 he entered the Academy schools. During the following years his painting attracted much attention, especially the "Highland Dogs" (1819) and "Alpine Mastiffs Reviving a Traveler in the Snow" (1820). The latter work, engraved by his father and brother, became one of the most popular prints of the day.

In 1825 he went to Scotland, visiting Sir Walter Scott, whom he painted with his dogs at Abbotsford, and traveling in the Highlands. This visit was of decisive influence upon his art. A great lover of sport, he learned to know the deer in their native haunts and was the first to introduce them into art. His imagination was also affected by the grandeur of mountain scenery, which he used as background for many of his pictures. From this time, too, he began to paint animals, especially the dog, in their relation to man, endowing them with human sentiments. This quality is the chief source of his popularity with the public, but it also distinguishes him unfavorably from really great animal painters like Potter, Snyders, and Troyon, who painted animals as they really are in nature. He also increased the popularity of his pictures by carefully chosen names. Among his most celebrated paintings are "High Life and Low Life" (1831), Tate Gallery, a deerhound and a butcher's mongrel; "A Jack in Office" (1833), South Kensington Museum; "Bolton Abbey in the Olden Time" (1834); "Chatsworth," a picture showing dexterous treatment of dead game, "The Old Shepherd's Chief Mourner," South Kensington Museum, "A Distinguished Member of the Humane Society" (1838), Tate Gallery, "Dignity and Impudence" (1839), National Gallery; "A Random Shot" (1848); "Monarch of the Glen" (1851).

Landseer became an associate of the Royal Academy in 1826, at 24 years of age, the earliest allowed by the statutes, and a member in 1831. He frequently drew and painted the Queen and the Prince Consort, both of whom he taught etching. He was of a nervous temperament, and his peculiar sensitiveness to imagined slights filled the latter part of his life with mental depression. In 1850 he was knighted; in 1855 he received gold medals at the Paris Exposition and at Vienna in 1873. In 1865 he declined the presidency of the Academy. He died Oct. 1, 1873, and was buried in St. Paul's Cathedral.

Although not of the same high quality as his animal paintings, Landseer's portraits were frank and natural; among the best are those of himself and of his father. In the "Connoisseurs" he represented himself as sketching, with a dog on each side watching his progress. He also designed for engravings, his best designs being his illustrations to the *Waverley Novels*. As a sculptor, he designed the fine lions at the base of Nelson's Monument in Trafalgar Square, besides a "Stag at Bay," exhibited the year of his death. In painting he was a facile drafts-

man, swift in execution and elegant in line; his color, however, especially in his last works, is liable to be cold and crude. The chief interest of his canvases consists in their illustrative value, and they are best known through the large number of excellent engravings made of them, especially by his brother Thomas.

His paintings can be studied only in England. The National Gallery contains, besides the important works mentioned above, "King Charles Spaniels" and "Sleeping Bloodhound." In South Kensington Museum there are: "Highland Drovers' Departure"; "Dog and Shadow"; "A Fireside Party"; "There is No Place Like Home"; "The Two Dogs"; "Tethered Rams"; "Suspense"; "Eagle's Nest." The Tate Gallery possesses: "Highland Music" (1830), "Hunted Stag" (1838), "Peacock" (1846); "War" (1846), "Highland Dogs", "Alexander and Diogenes." The National Portrait Gallery contains his portrait of Sir Walter Scott. There are also fine examples at Windsor and in other royal palaces. Among well-known works in private possession are: "Cat's Paw" (1824), "Poacher Deer Stalking"; "Otter Speared" (1844); "Swannery Invaded by Eagles"; "Stag at Bay."

Bibliography. The best monograph on Landseer is by J. A. Manson, in *Makers of British Art* (London, 1902). Consult also Stephens, *Memoirs of Landseer* (London, 1873); Dafforne, *Pictures by Landseer* (ib., 1873); Algernon Graves, *Catalogue of the Works of Landseer* (ib., 1875); M. F. Sweetser, "Landseer," in *Artist Biographies*, vol. III (Boston, 1878).

LAND'S END. The westernmost point of England, in Cornwall, on the Atlantic Ocean, at the entrance to the English Channel (Map England, A 6). The promontory consists of granite cliffs from 60 to 100 feet high, carved into fantastic shapes by the waters of the Atlantic. The vicinity is noted for fine cliff scenery and for one of the most celebrated of natural rock-ing or logan stones in the Kingdom. Land's End is the ancient Bolerium Promontorium.

LANDSHUT, lants'hoot. A free city and the capital of Lower Bavaria, situated on the Isar, 42 miles by rail northeast of Munich (Map Germany, E 4). It is an old town with broad streets and picturesque gabled houses and is partly situated on an island in the river. The churches of St. Martin, St. Jodocus, and the Hospital Church are interesting brick edifices, the first surmounted by a tower over 430 feet high. The Rathaus, originally erected in the fifteenth century, has a number of fine frescoes in its splendid late-Gothic council chamber. Another notable building is the magnificent Italian Renaissance palace erected in the sixteenth century. Its court, with columns, and its friezes, are among the best of their kind. In the vicinity of Landshut, at an altitude of 1530 feet, rises the old castle of Trausnitz, former seat of the dukes of Lower Bavaria. There are schools of agriculture, trade, electricity, pottery. The university, transferred hither from Ingolstadt in 1800, was removed to Munich in 1826. The town manufactures mainly machinery, ropes, chemicals, tobacco, straw hats, art goods, vehicles, organs, textiles, and flour, carries on some trade in agricultural products and live stock, and has important markets or fairs. Pop., 1900, 21,736; 1910, 25,137, mostly Roman Catholics. Landshut was founded in 1204 and was from 1255 to 1503 the capital of the Duchy of Bavaria-Landshut.



LANDSEER

"A DISTINGUISHED MEMBER OF THE HUMANE SOCIETY"
FROM THE ORIGINAL IN THE NATIONAL GALLERY, LONDON

LANDSKNECHT, lānts'knēkt. See **FREE LANCE**; **MERCENARIES**.

LANDSKRONA, läns-krō'nā. A fortified seaport town of Sweden, situated on the Sound, 24 miles north of Malmö (Map: Sweden, E 9). It is regularly built, with broad and straight streets and handsome houses. It has a castle, built in the sixteenth century, which is now used as a prison. The subterranean Observatory of Tycho Brahe stands on the island of Hveen, opposite the town. As one of the manufacturing cities of Sweden, it produces tobacco, sugar, leather, woolen goods, smokeless powder, and ironwork. In the vicinity are coal mines. Its harbor is 35 feet deep, and is equipped with shipyards and good docks. It has regular steamship communication with Copenhagen, Lübeck, and the Swedish coast towns. It carries on considerable trade in grain, dairy products, and timber. Pop., 1901, 14,399. 1911, 16,459.

LANDSLIP. A mass of earth and rocks which for some cause becomes detached from its original position and slides down to a lower level. Earthquakes, erosion, and especially the action of percolating water are common agents of landslips or landslides. There are records of great landslips in the Alps that received their initial impetus from earthquakes, but this agency is most prominent in volcanic regions. The base of cliffs along river valleys is subject to removal by erosion, thus undermining the strata above. The base of strata which rest in an inclined position upon beds of clay or other loose materials may be lubricated by the infiltration of water, causing the strata to slide by mere gravitation. Elevated peat bogs have been known to discharge themselves after heavy rains upon neighboring fields. See **AVALANCHE**.

LANDSMAAL, läns'mål'. The popular indigenous dialects of Norway, as distinguished from the literary language, or Dano-Norwegian, also called Rigsmaal; in a narrower sense, some normalized form of these dialects as used by certain modern writers.

After the union between Denmark and Norway in 1397, Danish became the literary and official language of Norway, though in time this Danish came to differ somewhat in vocabulary and pronunciation from that spoken in Denmark. The old Norwegian language gradually disappeared, except in the country districts. To re-instate this into its former position of a national medium of expression was the purpose of the Landsmaal movement. This was only one phase of that interest in Norse antiquities which characterized the Romantic movement in Scandinavia; it was also a phase of the new national feeling which permeated Norway after its separation from Denmark in 1814.

The chief exponent of the Landsmaal movement is Aasen (q.v.), who in 1848 wrote *Det Norske folkesprogs grammatik*, and in 1850 his *Ordbog over det norske folkesprog*. From that time he and others have labored unceasingly for the recognition of a national Norwegian language. In spite of its bitter enemies, including such men as Björnson and Ibsen, the Landsmaal movement has made steady progress. In 1892 the Legislature passed an ordinance investing the local school board with the right to decide whether the language of the textbooks and of the written work of the pupils shall be Landsmaal or Rigsmaal. The students must learn to read both languages. According to a later ordinance (1896), the students in the sec-

ondary schools must learn to read the Landsmaal as well as the Rigsmaal and to explain passages of literature in both. In 1899 a chair in "Landsmaal and its dialects" was created in Christiania University. In 1912 an ordinance went into effect, according to which the candidates for the maturity examination (artium) may write the two essays constituting the language test in either tongue, but such candidates as write both essays in the same language must take a supplementary examination in the other.

The salient characteristics which distinguish the Landsmaal from Danish are (1) the preservation in several endings of the Old Scandinavian *a*, weakened in Danish to *e*; (2) the consonant sounds *p*, *t*, *k* in certain positions for the Danish *b*, *d*, *g*; (3) the diphthongs *au*, *oy*, *ei*, in several cases where Danish has *ø*, *ö*, *e*; (4) distinctive forms for the masculine and feminine genders, which in Danish are alike; (5) a vocabulary almost exclusively Scandinavian, as against the largely Germanized vocabulary of Danish.

The Landsmaal has a literature not insignificant. Among its best-known authors are Aasen, Vinje, Janson, Garborg, Braaten, Uppdal, etc. There are periodicals printed in the language and also a number of good translations.

Bibliography. Aasen, *Ordbog over det norske folkesprog* (Christiania, 1850), id., *Norsk grammatik* (ib., 1864); Hægstad, *Norsk maalsaga for skule og heim* (Oslo, 1907); Calvin Thomas, "Recent Progress of the Landsmaal Movement in Norway," in *Modern Language Association, Publication*, vol. xxv (Baltimore, 1910); Seip, *Norsk grammatik* (Christiania, 1911). Lillehei, "On the Forms of the Landsmaal in Norway," in *Society for the Advancement of Scandinavian Study, Publication*, vol. i (Urbana, Ill., 1913), containing a good bibliography.

LANDSMAN. Formerly the lowest rating in all branches of the enlisted force of the navy. Landsmen then composed nearly one-third the crew of an ordinary man-of-war. Any young man of sound physique, good moral character, and not less than 18 nor more than 25 years of age was eligible for enlistment, as no nautical or naval knowledge or training was required. In the seaman branch the name of the rating is now *apprentice seaman*, and men so enlisted are accorded the same instruction as that formerly given to landsmen. Men are still enlisted as landsmen for service in the other branches, but they are very few in number on board ship. The pay of a landsman is \$17.60 per month.

LANDSTAD, länd'stād, MAGNUS BROSTRUP (1802-80) A Norwegian bishop, poet, and folklorist. He was born near the North Cape, on the island of Maaø, was educated for the ministry, and succeeded his father as minister at Seljord. He retired in 1876 and removed to Christiania. His greatest literary work was his *Norske Folkeviser* (1851-53), a collection of about 130 popular poems, with music by Lindemann. In this field Landstad and Faye were practically pioneers. In hymnody also he made himself a name by many hymns of his own, by translations from Luther (1855), and by the *Kirkesalmebog*, a hymnary which he compiled, about 60 selections being his own work. It was authorized in 1869 for use by the Norwegian church in Norway and America, and is still its hymnary. His work, *Digte og Sange* (1879), is largely rural and popular in character. *Gamle Sagn om Hjartdolerne* appeared in 1880.

LANDSTURM, *lânt'shturm* (Ger., land storm, land uprising). A part of the military reserve forces of the German and other armies. Service in the German Landsturm is as follows: the men are those who are liable to military service, but do not belong to the army or navy, from the completed seventeenth to the completed forty-fifth year of age. It is divided into two levies, or bans: first ban, those liable to service but who have had no training, from the seventeenth to the thirty-ninth year; second ban, all men, trained and untrained, from the thirty-ninth to the forty-fifth year. See *ARMIES AND ARMY ORGANIZATION; CONSCRIPTION; GERMANY, Army; LANDWEHR*.

LAND TAX. The earliest direct taxes were levied upon land, as the principal source of income. The Athenian tax of 596 B.C. was a land tax levied upon the basis of yield in kind (estimated, not actual yield), and the earliest direct taxes in the Roman Republic were of a similar character. With the development of movable wealth in both Greece and Rome the basis of direct taxation became broader. Other income sources were levied upon roughly in proportion to their productiveness.

After the breakdown of the Roman Empire and the consequent decay of commerce and industry, land became once more the principal source of disposable income, and hence the chief object of direct taxation. In Germany, down to the twelfth century, taxes were levied upon land alone, and the same thing was true of practically the whole of northern Europe. The English imposts known as *shipgeld*, *Danegeld*, the *scutage*, *carucage*, and *tallage* were land taxes. In this period taxes were collected, for the most part, in kind and were levied in proportion either to actual yield, thus varying from season to season, or to estimated yield. The special tax on estimated yield, commuted into a money payment, survived in certain instances to the end of the nineteenth century. Such a survival was the corn tax in Denmark, which remained precisely at the same level for almost a century and a half. It was originally apportioned according to estimated yield in grain, and with the lapse of time came to bear very unevenly upon the several holdings, in consequence of changes in agricultural technique or in means of transportation affecting the value of lands.

With the great development of commercial and industrial wealth of modern times other sources of direct taxation were added to the land tax, until by the opening of the nineteenth century a tendency was clearly manifest to assimilate land to other forms of property under a uniform rate of taxation. This tendency attained full realization in the United States, where, indeed, the provision was frequently inserted in the State constitutions that all property should be assessed for taxation at a uniform rate.

In the last half century the evolution towards assimilation of all forms of property and taxation at a uniform rate has been checked. In the public finance of European countries land is frequently given special treatment and special taxation for local purposes. The most significant developments in this direction are the land taxes of the British states of Australasia, the western provinces of Canada, and of certain States and cities of the United States. Underlying this new tendency in taxation is the principle that the social and political consequences of land

tenure present peculiarities different from those of the exploitation of other forms of wealth. Hence, it is held, social and political considerations, rather than purely financial, should dominate in the taxation of land.

As the most extreme instance of this tendency we may review the land taxation policy of New Zealand. In the third quarter of the nineteenth century land holdings were highly concentrated in that colony. Vast tracts were held for grazing or for speculative purposes, frequently by persons who were not resident in the colony. This situation was felt to be prejudicial to the interests of the colony, and the plan of forcing the subdivision of such tracts through differential taxation early gained popular support. In 1878 a law was passed levying a tax of half a penny in the pound on the capital value of land, unimproved. This tax was abolished in the year following. But in 1893 a far more drastic law was passed. A flat rate of one penny in the pound of unimproved value of land was levied, but on holdings worth less than £1500 (bare land value) £500 were exempt from the tax. In addition to the flat rate a graduated tax was levied on large estates, ranging from one-eighth of a penny in the pound on estates from £5000 to £10,000 up to two pence in the pound on estates above £210,000. On the holdings of absentees from the colony the land tax was increased by 20 per cent.

In 1903 the graduated tax on large estates was increased. By this Act the rate on estates of a value of £7000 (excluding improvements) was increased by one-sixteenth of a penny in the pound; the rate on estates of £210,000 was increased to three pence in the pound. In 1908 the scale of graduation was again raised on estates of £40,000 and upward. Under this law an estate of £200,000 pays a tax of two per cent of the capital value.

The taxes referred to above are provincial taxes. Local authorities are given the option of raising their revenues from land or from other sources. About one-half of the boroughs levy direct taxes upon the unimproved value of land. Two of the chief cities, Wellington and Christchurch, follow this system of taxation.

In South Australia taxes on the unimproved value of the land have been levied for provincial purposes since 1885. Municipalities were empowered in 1893 to levy taxes upon the same basis. In the Canadian Province of Alberta the system is employed for both provincial and local purposes; in British Columbia local authorities are permitted to confine real taxes to the unimproved value of the land alone. In the United States the most conspicuous instance of the tendency is in Oregon, where counties, under a constitutional amendment of 1911, are permitted to confine taxation to land if they choose. The cities of Houston, Tex., and Pueblo, Colo., have levied discriminating taxes upon the unimproved value of the land. In the State of New York a powerful movement in the same direction has resulted in the separate assessment of land and improvements in New York City and in the introduction of several measures in the Legislature for increasing the relative burden upon the land.

The accepted theory of the incidence of land taxation is that it rests where it is placed and cannot be shifted to the consumer of the products of land. A land tax which remains unchanged, like the Danish corn tax mentioned

above, the old Dutch land tax, and the British land tax, becomes practically a rent charge upon the land. In so far as it exceeds the prevailing rates upon other forms of property it sinks the price of the land by an amount equal to its capitalized value. Land taxes that are not fixed in amount, but that exceed the prevailing rate, have a similar tendency to depress the value of land. Hence, it may be said that they represent no real burden to later purchasers of the land; if they reduce the net income value of the land, they have reduced the capital value proportionately. This theory of the incidence of land taxation and its corollary, that no matter how heavy the tax upon land the progress of improvement will not be checked, together with democratic hostility to the large estate and to absenteeism, explains the strength of the current political tendency towards special taxes upon land. See SINGLE TAX, UNEARNED INCREMENT; TAXATION.

LAND TORTOISE. A tortoise (or turtle) of terrestrial habits. All these belong to the extensive family Testudinidae, but do not include all of that family, a large section of which—the terrapins (q.v.) and their allies—are thoroughly aquatic in their adaptations. The land tortoises proper form a section of the family easily recognized by their feet, in which the toes are short, without webs, and the hinder ones "clubbed," while the front of the fore limbs is protected by strong horny scales or frequently by dermal ossifications. The carapace of the shell is usually heavy and highly arched, and the plastron is firmly united to it at the sides of the body. The top of the strong shell is covered with shields, the tail is short, and the entire structure is calculated for compact and secure defense within the fortress of the shell, since these creatures can neither run away from an enemy nor fight him effectually. Land tortoises flourished in past ages, and a few genera, chiefly *Testudo* and its recent modifications, have survived in a limited way to modern times. The term is applied in Europe mainly to the "common" or Greek tortoise, and in the United States to the similar gopher (q.v.) or to the somewhat different box turtles (genus *Cistudo*). Most commonly, however, it refers to the gigantic terrestrial tortoises of the Mascarene and Galapagos groups of islands, now nearly extinct. See TORTOISE.

LAND TRANSFER, REFORM IN. The ancient methods of conveyancing by feoffment and livery of seisin, etc., have been superseded by simple deeds, granting and conveying the property by an accurate description by metes and bounds and signed and sealed by the grantor. In the United States the States are divided into counties, the latter into townships, and the latter into sections; and before a conveyance of real estate it is the practice to have it surveyed and insert in the description in the deed the metes and bounds established by the survey, instead of a general description, as "My estate of Blackacre," as was formerly customary. Recording or registry acts have been passed in most States, and the record of deeds supersedes the dramatic notoriety of livery of seisin. In some cities the record of conveyances must be ordered under sections and blocks into which the area included in the corporate limits is divided. The Torrens system (q.v.) of land registration has greatly simplified the transfer of land in Australia. This system has been

partially adopted in England, Massachusetts, Illinois, Minnesota, and several other States, and is in force in the Philippines and Hawaii. Consult Niblack, *The Torrens System* (Chicago, 1903), and Hogg, *The Australian Torrens System* (London, 1905). See CONVEYANCE.

LANDWEHR, lant'vâr (Ger., land defense). A military term originating in Prussia and since applied to a branch of the national reserve forces of Austria-Hungary, Germany, Japan, and Switzerland. The Prussian Landwehr was first proposed in 1806 by Major Knesebeck of the Prussian army; but it was not until the commencement of the campaign of 1813 that the Prussian system of national defense, for which it was originally solely devised, came into actual being. It was then organized on Scharnhorst's plan by a royal edict dated March 17, 1813. By the constitution of April, 1871, the Prussian regulations were extended to the German Empire. In Austria-Hungary the Landwehr of Austria and Honvédség of Hungary were organized in 1889—citizens who have been transferred from the common army serving two years, and others 12 years. After quitting the reserve of the regular army the German conscript serves 12 years in the Landwehr, five years in the first class, or ban, and seven years in the second ban, completing his service in the Landwehr at the age of 39, when he is transferred to the Landsturm (second ban) for service until the forty-fifth year. In Japan those who have served their period in the active army perform 10 years' landwehr (called "kobi") service. All able-bodied citizens of the Swiss Republic are compelled to serve eight years in the national Landwehr from the thirty-second to the completed fortieth year of their age. They then pass to the Landsturm for the remaining eight years of their service.

The general evolution of the Landwehr has been from a force organized entirely for home defense to an important part of the trained defensive or offensive forces of the nation. See ARMIES; GERMANY, Army; CONSCRIPTION.

LANE, ALFRED CHURCH (1863-) An American geologist, born in Boston. He graduated from Harvard in 1883, taught mathematics there for two years, and studied at Heidelberg. From 1889 to 1892 he was petrographer of the Michigan Geological Survey and instructor in the Michigan College of Mines; thereafter until 1909 he was assistant State geologist (seven years) and State geologist (10 years). In 1909 he was appointed Pearson professor of geology and mineralogy in Tufts College. At the University of Michigan he lectured on economic geology in 1904. He became a member and officer of numerous scientific societies. Various reports on the geology of Michigan, Canada, and the United States were edited, and in part prepared, by him, and he is author also of many short articles of general scientific interest.

LANE, EDWARD WILLIAM (1801-76). An English Arabic scholar. He was born in Hereford, the son of Prebendary Theophilus Lane. After education at Bath and Hereford he abandoned an intention to enter holy orders, also abandoned, owing to ill health, the engraver's profession, which he had learned, and, with a strong predilection for Oriental studies, went to Egypt in 1825. He soon learned Arabic, and, adopting the native garb and habits, commenced his travels, observations, and sketches, which, with the exception of an interval in England,

extended from 1824 to 1835 and resulted in the publication of *Manners and Customs of the Modern Egyptians* (2 vols., 1836), still a standard authority. This was followed by a new translation of the *Thousand and One Nights, or Arabian Nights' Entertainment* (3 vols., 1838-40). From 1842 to 1849 he was in Egypt, collecting materials for an *Arabic-English Lexicon and Thesaurus*, and after his return to England the rest of his life was devoted to the preparation of this gigantic work for publication. In 1863 he received a civil-list pension. Seven volumes of his *Lexicon* (1863-74) appeared during his lifetime; the posthumous publication was completed by his grandnephew, S. Lane-Poole, with the issue of three further volumes (1877-92), the funds being provided by Lane's early friend, the Duke of Northumberland. Consult S. Lane-Poole, *Life of Edward William Lane* (London, 1877).

LANE, FRANKLIN KNIGHT (1864-). An American cabinet officer, born on Prince Edward Island, Canada. Early in life he moved to California, where he attended the State university. He was a reporter, New York correspondent for Western papers, and later part owner and editor of the Tacoma *Daily News*. After his admission to the California bar in 1889, he practiced law in San Francisco, where, as corporation or city counsel from 1897 to 1902, he made a reputation for efficiency and honesty. He was the unsuccessful Democratic candidate for Governor of California in 1902 and for United States Senator in 1903. In 1905 he was appointed by President Roosevelt to the Interstate Commerce Commission and served until 1913 with much success. This nonpartisan appointment was received with satisfaction throughout the country, and Lane's elevation to the chairmanship of the commission in 1913 was also widely endorsed. In 1913 he accepted the invitation to enter the cabinet of President Wilson, as Secretary of the Interior. In this office he urged conservation of coal lands and was instrumental in securing the passage of the Alaska Railway Bill of 1914, providing for a government-built road.

LANE, GEORGE MARTIN (1823-97). An American Latinist and educator, born at Charlestown, Mass. He studied under Beck at Harvard, graduating in 1846; was a Latin tutor there for a year, then studied at Berlin, Bonn, and Heidelberg, and at Göttingen, where in 1851 he took his doctor's degree with a thesis, *Smyrnaeorum Res Gestæ et Antiquitates*, which is still authoritative. He returned at once to Harvard to become professor of Latin. In 1869 he was appointed Pope professor. After his resignation, in 1894, he still continued, as professor emeritus, to give graduate courses. A brilliant and original teacher, he was the author of *Latin Pronunciation* (1871), which turned the tide against the "English method" in the United States, and of a *Latin Grammar* (completed by Morgan, 1898), which is remarkable for its felicitous translations. He was a valued contributor to Harper's Latin lexicons. The well-known ballad of the "Lone Fishball" was from Lane's pen. Consult M. H. Morgan, "Memoir of Professor Lane," in *Harvard Studies*, ix (Cambridge, 1898).

LANE, HARRY (1855-). An American legislator. He was born at Corvallis, Benton Co., Oreg., graduated in medicine in 1876, and served as superintendent of the Oregon State Insane Asylum from 1887 to 1891. He was mayor of

Portland, Oreg., for two terms (1905-09) and in 1913 was elected United States Senator. Early in his term he advocated government ownership of telegraphs and telephones and attacked the firm of J. P. Morgan & Co., for the support it gave to certain financial operations of the New Haven Railroad.

LANE, HENRY SMITH (1811-81). An American political leader, born in Montgomery Co., Ky., where he received an academic education. He studied law, was admitted to the bar, and in 1832 removed to Crawfordsville, Ind., where he practiced and became identified prominently with Whig politics. In 1837 he was elected to the Indiana State Senate; in 1840 he was elected to Congress to fill a vacancy, and he remained in that body until 1843. He served in the Mexican War as lieutenant colonel of a regiment of Indiana volunteers. With the break-up of the Whig party in Indiana, he and some of his former party associates entered into an organization that became the nucleus of the Republican party in the State. Lane took a prominent part in the movement that led to the calling of the first national convention of the party in 1856 at Philadelphia, of which he was chosen permanent chairman. In 1859 he was elected by a coalition of Republicans and "American" members of the Legislature to the United States Senate, in opposition to Jesse D. Bright, who was chosen by the Democrats and seated after a contest. In 1860 he was elected Governor of Indiana and served for a few days in January, 1861, resigning in anticipation of his election to the Senate, where he served from the following March until 1867. In 1866 he was a member of the Loyalists' convention.

LANE, JAMES HENRY (1814-66). An American soldier and politician. He was born at Lawrenceburg, Ind., studied law, and in 1840 was admitted to the bar. In May, 1846, he volunteered for service in the Mexican War. He was chosen colonel of an Indiana regiment and commanded a brigade at the battle of Buena Vista. Immediately after the close of the war he was elected Lieutenant Governor of Indiana, serving in this capacity from 1849 to 1853, and from 1853 to 1855 he was a Democratic member of Congress. In 1855 he removed to Kansas and there became conspicuous as a leader of the Free-State party. He was president of the Topeka Constitutional Convention in the fall of this year, was second in command on the Free-State side during the so-called Wakarusa War, and in 1856 was chosen United States Senator by the Legislature which had met under the Topeka constitution. This election, however, was not recognized by Congress, and Lane remained in Kansas, where in 1859 he acted as president of the Leavenworth Constitutional Convention. In 1861, Kansas having at last been admitted to the Union, Lane was elected to the United States Senate, but, the Civil War having broken out, he soon volunteered for active service in the field, and, after commanding for a time the frontier guards about Washington, was appointed brigadier general of volunteers in December, 1861, though his commission was canceled in the following March. He projected several visionary military expeditions, such as the Great Southern Expedition from Kansas in 1861-62; he became "commander for recruiting in the Department of Kansas" in July, 1862, and in this capacity endeavored to usurp the functions of Governor Robinson and

later of Governor Carney. In 1864, during General Price's raid, he was an aid to General Curtis. He was reelected to the United States Senate in 1865, but in 1866 was attacked with paralysis and during a temporary aberration of mind committed suicide.

LANE, JONATHAN HOMER (1819-80). An American physicist, born at Geneseo, Livingston Co., N. Y., and educated at Phillips Exeter and at Yale College, where he graduated in 1846. In 1848 he was appointed assistant examiner in the United States Patent Office and in 1851 was made chief examiner, but in 1857 was removed for political reasons. In 1869 he was appointed verifier of standards in the office of weights and measures at Washington. In 1870 he published a valuable paper entitled *The Theoretical Temperature of the Sun*. Lane patented an optical telegraph or semaphore and an improved mercury horizon and attempted experiments to secure low temperatures and to determine the absolute zero.

LANE, JOSEPH (1801-81). An American pioneer and soldier, born in Buncombe Co., N. C. He removed to Kentucky in 1814 and two years later crossed the Ohio into Warrick Co., Ind. He was elected to the Legislature in 1822 while still under age and was consequently obliged to wait some time before he could take his seat. From that time until the outbreak of the Mexican War he was a member of one branch or the other of the Indiana Legislature, but in 1846 he resigned from the State Senate to enlist as a private. Soon afterward he was elected colonel of the Second Indiana Volunteers and in 1846 was commissioned brigadier general. He was wounded at the battle of Buena Vista and at Huamantla defeated General Santa Anna, for which service he received the brevet rank of major general in the regular army. He was very successful against the guerrilla bands which infested the country and became known as the Marion of the Mexican War. At the close of the war President Polk appointed him Governor of Oregon Territory, and, when President Taylor removed him two years later (1850), the people elected him delegate to Congress—an office which he held until Oregon's admission to the Union in 1859, when he was chosen to the United States Senate, where he served from February, 1859, to March, 1861. (He also acted as Governor of Oregon from May 16 to 19, 1853.) During President Pierce's administration he commanded the troops sent to suppress an uprising of the Indians. In 1852 the Indiana Democratic State Convention advocated his nomination for the presidency, and in 1860 he ran for Vice President on the ticket with John C. Breckenridge. Upon his defeat he retired from public life to his ranch in Oregon, where he lived in comparative poverty until his death.

LANE, SIR RALPH (c.1530-1603). The first Governor of Virginia. He was born in Northamptonshire, England, and is said to have taken part at an early age in the buccaneering expeditions in which English ships were employed at that time. In 1583-85 he was employed in the government's service in Ireland. He joined Sir Richard Grenville's expedition to America in 1585 and after its arrival established a colony on Roanoke Island and became Governor. The colony was not successful, owing to disadvantageous location, the hostility of the Indians, and the lack of food. When Sir Francis Drake arrived with his fleet in June, 1586, the colo-

nists were glad to return to England. Upon his return Lane was appointed to carry out certain plans for defending the coast, took part in Drake's expedition in 1589 against Portugal, and in 1591 helped to put down an Irish rebellion, for which he was knighted two years later. He remained in Ireland until his death. Consult Sir Ralph Lane, "Account of the Particularities of the Employments of the Englishmen Left in Virginia," in H. S. Burrage (ed.), *Early English and French Voyages* (New York, 1906), and the same in *Old South Leaflets*, vol. v, no. 119 (Boston, 1902).

LANE, RALPH NORMAN ANGELL (better known as NORMAN ANGELL) (1874-). A journalist and peace advocate, of English birth, who lived for some time in the United States and afterward in Paris. He was educated in England, at the Lycée of Saint-Omer, France, and at Geneva, Switzerland. Coming to America in 1890, he went West and engaged in ranching and prospecting, and from 1896 to 1898 he worked on newspapers. For two years he was Paris correspondent of American papers; he edited the *Paris Daily Messenger* in 1900-04, and from its founding in 1905 to 1912 he was general manager of the *Paris Daily Mail*. The book for which Norman Angell is best known, *The Great Illusion* (1910, 5th ed., rev., 1914), has appeared in England, the United States, France, Germany, Holland, Denmark, Sweden, Spain, Italy, Russia, Japan, and China, as well as in these languages: Arabic, Hindi, Bengali, Urdu, Marathi, and Tamil. A study of the relation of military power to national welfare, *The Great Illusion* holds that new economic and social factors in modern times have destroyed the utility of force in international relations and made coöperation instead of competition most advantageous for each state. In 1913 the Garton Foundation, London, was established to propagate Angell's ideas. Other of his writings include: *Patriotism under Three Flags* (1903); *Europe's Optical Illusion* (1909); *Peace Theories and the Balkan War* (1912); *The Foundations of International Policy*, or, in the American edition, *Arms and Industry* (1914); *The Problems of the War and the Peace* (1914); *Prussianism and its Destruction* (1914); *America and the New World State* (1915).

LANE, RICHARD JAMES (1800-72). An English engraver and lithographer, born in Hereford. In 1837 he was appointed lithographer to Queen Victoria. In 1864 he became teacher of etching at South Kensington. His works, which number more than 1000, include the lithograph "Sketches from Gainsborough" (who was his great-uncle), and a series after Lawrence. Among his excellent sketches in chalk or pencil are several portraits of the Queen. He helped to obtain the admission of engravers to the honor of full Academician in 1865. His lithographic portraits have a distinction of manner that raises them above the ordinary.

LANE, WILLIAM COOLIDGE (1859-). An American librarian. Born at Newton, Mass., he graduated in 1881 from Harvard University, where he was assistant librarian in 1887-93 and chief librarian after 1898. He served also as librarian of the Boston Athenæum in 1893-98. In 1898-99 he was president of the American Library Association, of whose publishing board he was secretary and treasurer and later chairman from 1886 to 1907. From 1904 to

1909 he was president of the American Bibliographical Society.

LANE-POOLE, STANLEY (1854-). An English author and archaeologist. He was born in London, Dec. 18, 1854, and was educated at Oxford. He studied numismatics and from 1874 to 1892 was connected with the coin department of the British Museum. During this time he prepared a *Catalogue of the Oriental and Indian Coins* in the museum (14 vols., 1875-92). He was also sent on several important archaeological missions to Egypt, Russia, and Australia. In 1895-97 he was employed by the Egyptian government in research at Cairo. From 1898 to 1904 he was professor of Arabic at Trinity College, Dublin. Among his many works are biographies of his great-uncle, *Edward William Lane* (q.v.) (1877), *Sir G. F. Bowen* (1889), *Aurangzeb* (1892), *Saladin* (1898), and *Babar* (1899); and numerous histories, as *The Moors in Spain* (1897; 7th ed., 1904), *Speeches and Table-Talk of Mohammed* (1882), *The Mohammedan Dynasties* (1893), *Saracenic Egypt* (1900), *The Story of Cairo* (1902), *Medieval India under Mohammedan Rule* (1903), *Egypt in the Middle Ages* (1905). He completed Lane's *Arabic Lexicon* (1877-92) and edited the *Koran* (1879). For his brother, see POOLE, R. L.

LANESSAN, lā'n'sān', JEAN MARIE ANTOINE DE (1843-). A French politician and naturalist, born at Saint-André-de-Cubzac, Gironde. He left his medical studies at Bordeaux to enter the health corps of the marine service and was engaged on the coast of Africa and Cochin-China until the Franco-German War, in which he served as surgeon, though he did not graduate in medicine till 1872. He was deputy in the National Assembly from 1881 to 1891 and from 1898 to 1906. He edited for a short time *Le Reveil* (1881-82) and *La Marseillaise* and interested himself especially in colonial matters. He was sent on missions to Tunis and Cochin-China to determine how far these countries could participate in the exhibition of 1889 and was Governor-General of Indo-China (1891-94). In 1899-1902 he was Minister of Marine in the Waldeck-Rousseau cabinet. He became political director of the *Siècle* and was chosen president of the Union of National Industries, the French Colonization Society, and the International Association of Colonial Agronomy. His writings include: *Du protoplasme végétal* (1876); *Manuel d'histoire naturelle médicale* (1879-81); *Etudes sur la doctrine de Darwin* (1881); *Traité de zoologie et Protozoaires* (1882); *La botanique* (1882); *Le transformisme* (1883); *Flore de Paris* (1884); *Introduction à la botanique* and *Le sapin* (1885); *La Tunisie* (1887); *L'Expansion coloniale de la France* (1888); *L'Indo-Chine française* (1889); *La colonisation française en Indo-Chine* (1895); *Principes de colonisation* (1897); *La lutte pour l'existence et l'évolution des sociétés* (1903); *La morale des religions* (1905); *L'Etat et les églises en France depuis les origines jusqu'à la séparation* (1906); *Les missions et leur protectorat* (1907); *La morale naturelle* (1908; new ed., 1912); *Le bilan de notre marine* (1909); *La lutte contre le crime* (1910); *Nos forces navales* (1911); *Nos forces militaires* (1913).

LANE THEOLOGICAL SEMINARY. A divinity school at Cincinnati, Ohio, founded in 1829 and opened in 1832. It is under the control of the Presbyterian church, but students from other evangelical churches are received.

No tuition fee is charged, and board is provided at a low cost. There are 40 scholarships, each yielding annually the interest on \$2000. The school maintains two clubs, the General Society of Alumni, and the Lane Club, composed of alumni of the vicinity and professors of the seminary. The school owns 60 acres of ground, given by Elnathan Kemper in 1829, a part of which is occupied by the campus. The seminary owns in addition a library building with over 23,000 volumes, five professors' residences, and a number of houses for rent. Its endowment in 1915 was about \$500,000, its income about \$20,000, and its enrollment 57, with a faculty of eight instructors.

LANETT, lā-nēt'. A city in Chambers Co., Ala., 2 miles southwest of West Point, Ga., on the Chattahoochee River and on the Chattahoochee Valley Railroad (Map: Alabama, D 3). It is in a fertile cotton district, and there are cotton mills and bleaching and dyeing works. Ample water power is afforded by falls near by. Pop., 1900, 2909; 1910, 3820.

LANFRANC, lān'frāŋk (c.1005-89). The most eminent of the foreign churchmen who rose to distinction in the mediæval Church of England. He was born of a noble family at Pavia, about 1005, and educated, partly in Pavia, partly at Bologna, for the profession of the law. In the hope of greater distinction he removed to France and taught at Avranches, in Normandy, in a school of law (c.1039), where he became famous. In 1042 he entered the monastery of Bec, not far from Rouen, and in 1045 was appointed prior and opened a school in the monastery which was soon thronged. In 1066 he left Bec and became abbot of a new monastery at Caen founded by William, Duke of Normandy. The latter selected him, after the conquest of England, to fill the primatial see of Canterbury, and he was induced with much reluctance to accept it in 1070. Under his spiritual rule the Church of England received as strong an infusion of the Norman element as was forced upon the political system of England by the iron hand of the Conqueror. He acted as Regent in the absence of William and sustained the feudal relation of King to Bishop in the vexed question of investitures. Lanfranc outlived William, and to his influence the historians mainly ascribed the peaceful submission with which that monarch's successor, William Rufus, was accepted by the Kingdom, as well as the comparative moderation of the earlier years of his reign. Lanfranc died at Canterbury on May 24, 1089. His chief writings are commentaries on the Epistles of St. Paul, the treatise against Berengar, *De Corpore et Sanguine Domini*, and sermons. His letters also are interesting. The first complete edition of his works is that of D'Achéry (Paris, 1648). They are also found in Migne, *Patrologia Latina*, vol. cl, and are edited by Giles (Oxford, 1844). Consult his *Life* by Crozals (Paris, 1877); Freeman, *Norman Conquest* (Oxford, 1887); Böhmer, *Die Falschungen Erzbischof Lanfranks* (Leipzig, 1902).

LANFRANCO, lān-frāŋ'kō, GIOVANNI (1580-1647). An Italian historical painter, of the Eclectic school. He was born at Parma and as a lad was page to the Marquis of Montalto. He showed such talent for design that his lord placed him with Agostino Carracci, who was then painting at Parma. After Agostino's death Lanfranco went to Rome to study under Annibale Carracci and assisted him in the frescoes of the

Farnese Palace. He painted in different cities of northern Italy, decorating the cupola of Santa Maria in Piazza at Piacenza with frescoes of "Angels in Glory" for the Marquis of Montalto. Paul V employed him in the Quirinal Palace and Santa Maria Maggiore. Through intrigue he obtained the commission for the cupola frescoes of San Andrea della Valle, which Domenichino had begun. The subject represented is the "Ascension of the Virgin," surrounded by a multitude of angels, and the decoration is one of the most remarkable of the kind ever executed, both in keenness of foreshortening and treatment of light. At Naples he decorated the cupola of the church of Gesù Nuovo (1631) and painted in other churches, besides finishing the frescoes in the cupola of the chapel of the Treasury in the cathedral, left incomplete at his death by Domenichino. On his return to Rome in 1646 Lanfranco painted "St. Peter Walking upon the Sea" for St. Peter's Church and a Passion series for the chapel of the Crucifix there. As a reward Pope Urban VIII raised him to knighthood. He died in his villa, near Rome.

Lanfranco's chief importance consists in his frescoes, his oil paintings being less pleasing. Of the latter there are numerous examples in all the Italian collections, at Madrid, and in the Louvre. His coloring is brilliant, and his style is vigorous, but all his work is superficial in character. He also studied engraving under Agostino Carracci, his most important plates being biblical subjects of Raphael's "Loggie" in the Vatican, engraved in conjunction with Listo Badalocchio.

LANFREY, LĀN'frā', PIERRE (1828-77). A French historian and politician, born at Chambéry, Savoy. He was educated at the Jesuit college at Chambéry, from which, however, he was expelled, and at the Lycée Bourbon, Paris, where he completed his studies in 1847. He then took up law at the universities of Grenoble and Turin. His bent, however, was towards philosophical and historical studies, and in 1853 he returned to Paris to enter the world of politics and journalism. He first attracted public attention by the publication in 1855 of *L'Eglise et les philosophes du 18ème siècle*, in which he enunciated liberal and anticlerical principles. This was followed in 1857 by his *Essai sur la révolution française* and in 1860 by his *Histoire politique des papes* and the Socialistic novel *Lettres d'Everard*. The same year he became editor of the *Revue Nationale*. In 1863 he published his work *Le rétablissement de la Pologne*. Resigning his editorship in 1864, he devoted himself to his great work, a political and social study of the First Empire, covering the period to 1812, published under the title *Histoire de Napoléon Ier* (1867-74). This is an able and scholarly arraignment of the first Napoleon and counteracted Thiers's laudation of the Emperor. Lanfrey fought with the Garde Mobile in the Franco-German War. In 1871 he was elected a member of the Assembly from Marseilles and shortly afterward was appointed Ambassador to Switzerland. In 1873, on the election of MacMahon to the presidency, he resigned his position and in 1875 was elected a life senator. In politics he acted with the Moderate Left. He died at Pau, Nov. 15, 1877. His *Œuvres complètes* and his *Correspondance* were published in Paris in 1879. Consult Comte d'Haussonville, in the *Revue des Deux Mondes* (Paris, 1880).

LANG, ANDREW (1844-1912). A Scottish

writer, born at Selkirk, March 31, 1844. He was educated at St. Andrews University and at Balliol College, Oxford. At the university he was distinguished for his knowledge of the classics. His *Ballads and Lyrics of Old France* appeared in 1872. His classical knowledge was turned to good use in the English versions of Theocritus, Bion, and Moschus (1880), the *Odyssey* (1879), the *Iliad* (1882), and the *Homeric Hymns* (1899). In the second and third of these translations he was aided by Butcher, Leaf, and Myers. From the French he translated with equal skill *Aucassin and Nicolette* (1867); edited Perrault's *Popular Tales*; and made selections for several books of fairy stories. He made substantial contributions to learning in *Custom and Myth* (1884), *Myth, Ritual, and Religion* (1887; new ed., 1899), and *The Making of Religion* (1898). As a poet he is favorably known by: *Ballads in Blue China* (1880); *Rhymes à la Mode* (1884); *Grass of Parnassus* (1888); *Ballads of Books* (1888). Others of his many publications are: *The Mark of Cain* (1886); *The Monk of Fife* (1895); *Pickle the Spy* (1897); *Magic and Religion* (1901); *The Mystery of Mary Stuart* (1901); *Alfred Tennyson* (1901); a good *Life of J. G. Lockhart* (1896) and of Prince Charles Edward (1900); an edition of Burns (1896) and of Scott (1899). His essays include: *Letters to Dead Authors* (1886); *Letters on Literature* (1889); *Essays in Little* (1891). His most substantial historical works are *A History of Scotland from the Roman Occupation* (1900 ff.) and *James VI and the Gowrie Mystery* (1902). Among later books are *Brown Fairy Book* (1904); *Adventures among Books* (1905); *Historical Mysteries* (1905); *John Knox and the Reformation* (1905); *Secret of the Totem* (1905); *Homer and his Age* (1906); *A Defense of Sir Walter Scott and the Border Minstrelsy* (1910). As a journalist, Lang was constantly writing leaders, especially for the *Daily News*, with which he was connected for many years.

Bibliography. Agnes Repplier, "Andrew Lang," in *Catholic Review*, vol. xvi (New York, 1912); P. H. Brown, "Andrew Lang, 1844-1912," in *British Academy, Proceedings, 1911-12* (London, 1912); Edward Clodd, "In Memoriam," in *Folk-Lore*, vol. xiii (ib., 1912); Edmund Gosse, in *Portraits and Sketches* (ib., 1912); Joseph Jacobs, "Andrew Lang as Man of Letters and Folk-Lorist," in *Journal of American Folk-Lore*, vol. xxvi (New York, 1913); J. H. Millar, "Andrew Lang," in *Quarterly Review*, vol. ccxviii (London, 1913).

LANG, LĀng, ARNOLD (1855-1914). A German-Swiss zoölogist and anatomist, born at Oftringen, Switzerland. He studied at the universities of Geneva and Jena, where he obtained his degree in 1876, and in the same year became privatdozent in zoölogy at Bern. Between 1878 and 1885 he was assistant at the zoölogical station at Naples; in 1886 he became Ritter professor of phylogeny at Jena; in 1889 professor of zoölogy and comparative anatomy at Zurich; and in 1898-99 was rector of the last-named university. His most important works are: *Die Polycladen (Seeplanarien) des Golfes von Neapel* (1884); *Ueber den Einfluss der fest-sitzenden Lebensweise auf die Thiere*, etc. (Jena, 1888); a *Lehrbuch der vergleichenden Anatomie*, which was translated into English as *Text-Book of Comparative Anatomy* (part i, 1891; part ii, 1896).

LANG, BENJAMIN JOHNSON (1837-1909). An American conductor and teacher, born at Salem, Mass. He studied under his father (a well-known local organist), F. G. Hill, Alfred Jaell, and Gustav Satter. At 15 years of age he was established as a teacher and organist, but some three years later went to Berlin, Germany, for advanced work in composition and a course of instruction under Liszt's direction. Upon his return to America he resumed his musical engagements, paying a return visit to Europe in 1869, during which time he gave concerts in Berlin, Leipzig, and other musical centres. He held many church appointments as organist, was for many years organist of the Handel and Haydn Society, and in 1895-97 conductor. He was also a leading member of the concert committee of the Harvard Musical Association, conductor of the Apollo and the Cecilia clubs from the time of their formation, and was famous for the great number of new works he gave to the various societies. He was on intimate terms with Wagner and was a loyal pioneer in America of that master's music. He also introduced into this country Mendelssohn's *Walpurgis Night* and Berlioz' *Damnation of Faust*.

LANG, lang, HEINRICH (1826-76). A Protestant theologian and Liberal leader, born in Frommern, Württemberg. He studied theology at the University of Tübingen. Banished from his country for taking part in the uprising of 1848, he accepted the post of pastor at Wartau, Switzerland, where he soon became famous as an advocate of the Reformed church. By means of his sermons and his periodical, *Die Zeitstimmen aus der reformirten Kirche der Schweiz*, he endeavored to promulgate views of Christianity, based on the results of modern higher criticism of the Bible. In 1872, when pastor at Meilen (near the Lake of Zurich), he united his paper with Bitzian's *Berner Wochenblätter* into the *Reform*. The most important of Lang's publications are: *Versuch einer christlichen Dogmatik* (1858; 2d ed., 1868), *Ein Gang durch die christliche Welt* (1859; 2d ed., 1870), a considerable number of his sermons, under the title, *Religiose Reden* (2 vols., 1873-74, 3d ed., 1896), in which he denounces the old doctrines of the orthodox Church.

LANG, JOHN MARSHALL (1834-1909). A Scottish Presbyterian minister, born in Glasford, Lanarkshire. He was educated at Glasgow University, was appointed to congregations in Aberdeen (1856), Glasgow (1865), and Edinburgh (1868), but returned to the Barony Church, Glasgow, in 1873 and in 1900 was made chancellor and principal of Aberdeen University. He served as moderator of the Church of Scotland in 1893, as president of the Council of Reformed Churches (Presbyterian) in 1896, and as lecturer on various foundations, and was made honorary member of St. Peterburg University and Military Academy and of the Egyptian institute. His principal publications are: *Gnostic Sects and Heroes* (1873); *Heaven and Home* (1875); *The Last Supper of our Lord* (1881); *Ancient Religions of Central America* (1882); *Life: Is it Worth Living?* (1883); *The Anglican Church*, St. Giles's Lectures (1884); *Homiletics on St. Luke's Gospel* (1889); *Gideon: A Study, Practical and Historical* (1890); *The Church and the People* (1893); *Expansion of the Christian Life*, Duff Lectures (1897); *The Church and its Social Mission*, Baird Lecture (1902).

Consult H. A. Lang, *Memoirs* (Edinburgh, 1910).

LANG, läng, KARL HEINRICH VON (1764-1835). A German author and historian, born at Balgheim and educated at Altdorf and Göttingen. In 1795 he was made privy archivist by Hardenberg, who also sent him to the Congress at Rastatt as Secretary of Legation in 1797. In 1799 he became Councilor of War and of Domains and in 1811 was appointed director of the government archives at Munich. His historical works, which are popular rather than scientific, include: *Beiträge zur Kenntniss der Verfassung des österrichischen Vaterlands* (1786); *Historische Entwicklung der deutschen Steuerverfassung* (1793); *Annalen des Fürstentums Ansbach unter der preussischen Regierung* (1806); *Geschichte der Jesuiten in Bayern* (1819). His other works, *Hammelburger Reisen in elf Fahrten* (last ed., 1822) and *Bairn'sches Strafgesetzbuch* (1822-25), are marked by a sarcastic humor, which enters largely even into his *Memoiren* (1842, last ed., 1881). Consult Petersen, *Aus der bosen alten Zeit: Lebenserinnerungen Langs* (Stuttgart, 1910).

LANG, MARGARET RUTHVEN (1867-). An American composer, born in Boston. She studied the piano with her father, B. J. Lang (q.v.); the violin with Schmidt in Boston, Drechsler and Abel in Munich, composition with Gluth, and orchestration with Chadwick. She wrote three overtures, *Phæbus*, a cantata for soli, chorus, and orchestra; a string quartet, piano pieces, and songs.

LANGAHA, lan-gä'ha (Malagasy name). A brown tree snake (*Dryophis langaha*) of Madagascar, about 3 feet long, having a prolonged, scaly snout, often flattened into a leaflike organ half an inch in length. That it uses this purely as a tactile organ seems doubtful, as it is simply a tree snake, with no hindrance to the ordinary use of the tongue. Some related snakes, like *Trigops* (see TREE SNAKE), have similar fleshy tips, and one, *Herpeton* (q.v.), has two distinct tentacles, but this species is aquatic, and such tentacles would usefully serve the purpose of the tongue, not easily protrusible in the water. Stejneger believes that these appendages serve mainly to increase the opening of the mouth, and thus assist the snakes in capturing prey, as do the bristles about the mouth of fly-catching birds.

LANGBAINE, läng'bän, GERARD (1656-92). An English bibliographer and critic, born in Oxford. He was the son of Gerard Langbaine, provost of Queen's College, Oxford, and came to be known as Langbaine the Younger, to distinguish him from his father. He was educated at University College, Oxford, but was noted for sporting rather than academic proclivities and did not graduate. He married young and later, with but a remnant of his patrimony, devoted himself to the study of dramatic literature and the collection of plays. According to his statement he had at least 980 stage works of various kinds, when, in November, 1687, a limited edition of *Monus Triumphans, or the Plagiarismes of the English Stage Exposed in a Catalogue of Comedies, Tragedies, etc.*, which is supposed to have been the work of Dryden, forestalled *A New Catalogue of English Plays*, which Langbaine published a month later, and in which Dryden's works are acutely criticized. Langbaine's work had a wide circulation and, with numerous amendments and additions, re-

solved itself into *An Account of the English Dramatic Poets, or Some Observations and Remarks on the Lives and Writings of All Those that Have Published Either Comedies, Tragedies, Tragicomedies, Pastorals, Masques, Interludes, Farces, or Operas in the English Tongue* (1691). This work is of substantial value, though weak in bibliographical detail.

LANGBEIN, lāng'bīn, AUGUST FRIEDRICH ERNST (1757-1835). A German humorous poet and novelist, born at Radeberg, near Dresden. He studied law at Leipzig, practiced it afterward in Dresden, and from 1800 on lived in Berlin, devoted entirely to literary pursuits. In 1820 he was appointed censor of belletristic literature. Extremely proficient in metrical composition and commanding an inexhaustible fund of drollery, he cultivated with especial success the comical poetic tale, frequently inclining towards frivolity, but teeming with fun. The widespread popularity of his *Schwanke* (1792; 21st ed., 1888) was almost equaled by that of his merry tales in prose, such as *Thomas Kellerwurm* (1806), *Magister Zimpels Brautfahrt*, and others, . . . for inventive faculty and pleasing . . . ne of his poems became almost folk songs, as *Ich und mein Flaschchen sind immer beisammen, Als der Grossvater die Grossmutter nahm*. He published himself the original edition of his *Sammtliche Schriften* (1835-37), his *Humoristische Gedichte* were edited by Tittmann (Halle, 1872), and *Humoristische Erzählungen* appeared in Leipzig, 1891. Consult Jess, *Langbein und seine Verserzählungen* (Berlin, 1902).

LANGDALE, MARMADUKE, first BARON (c 1598-1661). An English soldier, born in Yorkshire of a Roman Catholic family. Though an opponent of the ship-money tax (1639), he stood valiantly for King Charles when the civil war broke out and raised an infantry regiment to fight for him (1643). He became famous as a cavalry leader, defeated the Scottish horse at Corbridge, Northumberland, won a victory at Melton Mowbray, and raised the siege of Pontefract (1645). He met, however, with disaster at Naseby, his band of 1500 horsemen was scattered by successive defeats before he could join Montrose in Scotland, and Langdale had to flee to the Isle of Man and thence to France. Three years afterward he returned to fight for the Stuarts and surprised Berwick, but was once more defeated by Cromwell at Preston and this time taken prisoner. He was one of the seven Royalists who were absolutely excepted from pardon by the Commonwealth Parliament, but he escaped from Nottingham Castle to the Continent, where he was a soldier of fortune until the Restoration, when he was made Lord Lieutenant of Yorkshire (1660). Charles I had knighted . . . and Charles II made him a peer in . . . sult Gardiner, *History of the Great Civil War* (London, 1898).

LANGDELL, CHRISTOPHER COLUMBUS (1826-1906). An American legal writer and educator, born in New Boston, Hill-borough Co., N. H. He was educated at Phillips Andover Academy and at Harvard College, which he left at the end of his junior year (1849) to begin the study of law. He entered Harvard Law School in 1851 and graduated in 1853, removing immediately to New York, where he practiced until 1870, in partnership with Judges William G. Choate and Addison Brown. In 1870 he was elected Dane professor of law at Harvard Law

School and dean; he retired in 1895. He was prominently associated with the development of legal education in the United States, particularly in the introduction of the "case system" of study. A building and a professorship at Harvard were named for him. His publications include: *Selection of Cases on the Law of Contracts* (1870); *Selection of Cases on the Law of Sales* (1872); *Summary of the Law of Contracts and Equity Pleading* (1877); *Cases in Equity Pleading* (1878); *Brief Survey of Equity Jurisprudence* (1904).

LANGDON, JOHN (1741-1819). An American Revolutionary leader and statesman, born at Portsmouth, N. H. He received a grammar-school education, spent some years in a counting house in Portsmouth, and at the outbreak of the Revolutionary War had become a wealthy merchant and shipowner. He was an ardent champion of the rights of the Colonies and became interested in the organization of the local militia companies, as an officer of which he took part in Sullivan's seizure of Fort William and Mary at New Castle in December, 1774. In the following year he was elected to the Continental Congress, and later, as a naval agent of Congress, he superintended the building of several ships of war at Portsmouth. In 1776 he was appointed a judge of the New Hampshire Court of Common Pleas and in 1777 became a member and Speaker of the General Assembly of the State. At the time of Burgoyne's invasion he pledged his entire personal property to equip the New Hampshire volunteer troops, in which he served as a captain under Stark at the battle of Bennington and afterward at Saratoga. He continued to preside over the New Hampshire Assembly until the close of the war and in 1786-87 was again a member of Congress. In 1787 he was a delegate to the convention which drew up the Federal Constitution, took an active part in the debates, earnestly opposed the proposition to continue the power enjoyed by Congress under the Confederation of issuing unconvertible paper currency or bills of credit, and on the whole at that time approved of the establishment of a strong central government. He signed the Constitution as finally adopted and returned home to work for its ratification. The New Hampshire Convention, largely through his exertions, ratified the Constitution on June 21, 1788, making the necessary ninth State, and thus taking from Virginia, which ratified four days later, the honor of making the instrument effective.

In June, 1788, Langdon was chosen President of New Hampshire, and in November of the same year was elected to the first United States Senate. On April 6, 1789, he was elected President of that body, and in that capacity presided over the joint session of Congress convened for the counting of the electoral votes which made Washington the first President. He served as President pro tempore of the Senate continuously, except for a short period in 1792, when R. H. Lee presided, until 1794. From 1794 to 1804 he was a member of Congress, became a strong Anti-Federalist, and in 1801 declined the offer of the Navy portfolio in President Jefferson's cabinet. From 1802 to 1805 he was again a member of the New Hampshire Assembly, serving as Speaker in 1803-05, and in the latter year was elected Governor of the State, continuing in office by annual reflections until 1809. He was again elected in 1810 and 1811 and refused a renomination in 1812. In 1808 he

received the votes of nine Anti-Federal electors for the office of Vice President. He strongly supported Madison's war policy and measures in 1812-13.

LANGDON, SAMUEL (1723-97). An American clergyman and educator. He was born in Boston, Mass., graduated at Harvard in 1740, and taught a grammar school in Portsmouth. He was chaplain in the Louisburg expedition of 1745, settled at Portsmouth in 1747, and was pastor of the Congregational church there until 1774, when he became president of Harvard University. In 1780 he was forced to resign because of the opposition of the student body to his patriotic sentiments. Langdon received the degree of D.D. from Aberdeen in 1782. He was a charter member of the American Academy of Arts and Sciences and was a prominent advocate of the ratification of the Federal Constitution in the New Hampshire Convention of 1788. He was the author of a number of works on religion and philosophy.

LANGE, Läng'e, ERNST PHILIPP KARL (1813-99). A German novelist, better known by his nom de plume, Philipp Galen. He was born at Potsdam, studied medicine at Berlin, entered the Prussian army as surgeon in 1840, and was in charge of a field hospital in the Holstein campaign of 1849. After 1857 he lived at Potsdam. He wrote: *Der Irre von Saint James* (written in 1844, published in 1854; 9th ed., 1891), the best of his novels; *Walter Lund* (1855), a semi-biographical romance; *Andreas Burns* (1856), a sketch of life in Holstein; *Die Tochter des Diplomaten* (1865); *Der Alte vom Berg* (1873); *Die Moselnixe* (1877); *Die Fürstendiener* (1880); *Der Meyer von Monjardin* (1891). He also wrote the drama *Friedrich in Rheinsberg* (2d ed., 1873). Selected writings appeared in cheap editions (1857-68, 1883).

LANGE, FRIEDRICH ALBERT (1828-75). A German philosopher and economist, born at Wald, near Solingen, and educated at Zurich and at Bonn, where he became a privatdocent. He entered journalism as editor of the *Rhein- und Ruhr-Zeitung* (1862) and showed himself an able opponent of Bismarck's ministry. In 1870 he was appointed to a new chair of inductive philosophy at Zurich. His earlier literary activity was in economics and included such books as *Mills Ansichten über die sociale Frage* (1866), and the valuable work *Die Arbeiterfrage* (6th ed., 1909), which is Socialistic, but remarkably practical and independent. More important is his work in philosophy, especially the *Geschichte des Materialismus* (8th ed., 2 vols., 1908), with a valuable criticism of modern science, ethics, and economics. Consult Braun, *Lange als Socialökonom* (Halle, 1881), and Ellisen, *Lange, eine Lebensbeschreibung* (Leipzig, 1891).

LANGE, HENRY (1821-93). A German cartographer, born at Stettin. He worked with Berghaus and, after laboring three years in Edinburgh on Johnson's physical atlas, studied under Ritter and Dove in Berlin (1847 et seq.). In 1855 he entered the employ of Brockhaus at the head of the geographical department, retired in 1860, and in 1868 became inspector in the Berlin Statistical Bureau. He published: *Atlas von Nordamerika* (1854); *Brockhaus' Reise-atlas* (1858-73); *Land und Seekarte des mittelländischen Meers* (2d ed., 1870); *Südbrasilien, mit Rücksicht auf die deutsche Kolonisation* (1885).

LANGE, JOHANN PETER (1802-84). A German theologian. He was born at Sonnhorn, near Elberfeld, studied at Bonn, and, after serving for several years as pastor, became professor of theology at Zurich in 1841 and at Bonn in 1854. His works include: *Das Leben Jesu* (1844-47; Eng. trans., 1864 and 1872); *Christliche Dogmatik* (1849-52); *Grundriss der theologischen Hermeneutik* (1877); *Grundriss der theologischen Encyclopadie* (1877); *Grundriss der biblischen Hermeneutik* (1878). He is best known as one of the editors of the *Theologisch-homiletisches Bibelwerk* (1857 et seq.), published in English translation, edited and augmented by Philip Schaff, under the title *A Commentary on the Holy Scriptures, Critical, Doctrinal, and Homiletical* (25 vols., New York, 1865-80).

LANGE, lan'gä, JULIUS HENRIK (1838-96). A Danish art critic, born at Vordingborg. He entered the University of Copenhagen in 1858. On the first of his many journeys abroad, a tour of Italy in 1861-62, he decided to take up the study of art and became a constant attendant at Höyen's lectures. He belonged to a circle of young men with æsthetic and philosophic interests—among them Georg Brandes, Lange's personal friend. In 1870, after Höyen's death, he became docent, and in 1888 professor, of the history of art at the university and the academy. He wrote articles and books on ancient and modern art and on architecture. Among his earlier writings are *Om Kunstværket* (1876) and *Roskilde Domkirkes Alder og Stil* (1891). Of much interest are *Haanden paa Brystet, Den apocvndte Ansigtstillung, Den skrævcnde Stilung, and Vor Kunst og Udlændets* (1879). These and the broader *Sergel og Thorvaldsen* (1886; also in German) are preparatory to his great *Billedkunstens Fremstilling af Menneskeskikkelsen* (3 vols., 1892-99; translated into German; completed by P. Köbke), in which he explains his important discovery, the Law of Frontality. Modern art he treated in *Billedkunst* (1884) and *Norsk, svensk, dansk Figurmaleri* (1892). His *Udvalgte Skrifter* were edited by G. Brandes and P. Köbke (3 vols., 1900-03). Consult: Georg Brandes, *Julius H. Lange* (Copenhagen, 1898); P. Köbke, *Breve fra J. H. Lange* (ib., 1902; translated into German); *Efterslæt* (ib., 1903).

LANGE, Läng'e, LUDWIG (1825-85). A German classical scholar, born in Hanover. He studied at Göttingen under Hermann, in 1853 was made professor at Prague, in 1859 went to Giessen, and in 1871 to Leipzig. His principal work was *Handbuch der römischen Altertümer*, (3 vols., 3d ed., 1876-79); he also wrote *Der homerische Gebrauch der Partikel et* (1872-73) and *Die Epheten und der Areopag vor Solon* (1874). In the study of language the historical method, he insisted, was of great importance. His lesser writings were posthumously collected and edited, with a biographical sketch by K. Lange, under the title *Kleine Schriften aus dem Gebiet der klassischen Altertumswissenschaft* (1887). Consult K. G. Neumann, "Ludwig Lange," in *Biographisches Jahrbuch* (Berlin, 1886).

LANGE, SAMUEL GOTTHOLD (1711-81). A German poet. He was born at Halle, the son of the Pietist Joachim Lange (1670-1744), who was famed as the author of the Halle Grammars. The son studied theology at Halle and there became acquainted with Pyra, with whom he wrote *Thyren's' und Damons freundschaftliche Lieder*

(1745), attacked Gottsched (q.v.), whom they had both ardently followed before, and opposed the use of rhyme in poetry. His strongest claim to fame is the feeble version of Horace's *Odes* (1752, dedicated to Frederick the Great), which Lessing (q.v.) criticized and, when roused by Lange's fling that the critic's works because of their small format were only "Vademecums," overpowered with the brilliancy of his *Vade Mecum fur Lange* (1754).

LANGE, lan'gå, THOMAS (1829-87). A Danish novelist, born at Copenhagen. He studied theology, but was not ordained, and afterward devoted himself to literature. His first writings were published anonymously and attracted little attention. It was not until *Eventyrets Land* (1865) appeared that he was fitly appreciated. Later works gave him a place not much inferior to that of Goldschmidt (q.v.) in Danish literature. His works include: *Aaen og Havet* (1870), his best work; *Romantiske Skildringer* (*Romantic D...*; 1872); *De lyse Nætter* (1875); *...* (1877), *Nyt Liv* (1879).

LANGE, THOR NÆVE (1851-1915). A Danish author, born in Copenhagen and educated at the university in that city. In 1877 he went to Moscow as a teacher, becoming Danish Consul there in 1887. He took the degree of Ph.D. at the University of Copenhagen in 1894. His works include admirable translations from Greek, Old French, and Russian, and he made a good translation of Longfellow's "Golden Legend" (3d ed., 1891). He also compiled *Skildringer fra den russiske Literatur* (1886). His original volumes include: *En Maaned i Orienten*, *Flygtige Skizzer* (1887), *Skizzer og Phantasier* (1890), and a collection of his poems, *Gennem farvet Glas* (1894). He wrote also *Fjerne Melodier* (1902), *Strengespil* (1906), and *I danske Farver* (1907).

LANGEBEK, lang'e-bæk, JAKOB (1710-75). A Danish historian, born at Skjoldborg. He first studied Danish history, and it was by critical articles on contemporary writers in this field that he attracted attention. He founded a society for the study of the language and history of Denmark in 1745 and was its perpetual archivist. His works consist of valuable contributions on his favorite subject to the journals and to the *Danske Magazin* (1745-52), which he edited and nearly all of which he wrote himself, and *Scriptores Rerum Danicarum Medi Ævi*... (1772-74), which was completed by Suhm, Schoumø and others from original papers, in 1778. He also collected material for a Danish dictionary. His labors as a collector and publicist laid a foundation for the study of Danish history. A collection of his letters was published in 1895 by H. F. Rørdam.

LANGELAND, lang'e-land. A Danish island, County of Svendborg, at the south entrance to the Great Belt, between Fünen and Laaland (Map: Denmark, D 4). It is 33 miles long and 5 miles broad, area, 106 square miles. It is hilly and well wooded, and the soil is fertile. Grain, peas, butter, and cheese are largely produced. Pop., 1901, 18,995; 1911, 20,335.

LANGELIER, länzh'lyá', SIR FRANÇOIS CHARLES STANISLAS (1838-1915). A Canadian jurist and statesman. He was born at Sainte Rosalie, Quebec, was educated at St. Hyacinthe College and at Laval University, and was admitted to the bar of Lower Canada in 1861. Afterward he was appointed professor of Roman

law, of civil law, and of political economy at Laval University. From 1882 to 1890 he was mayor of Quebec, and after his election as a Liberal member of the Provincial Legislature, he became successively Commissioner of Crown Lands and Treasurer of the Province of Quebec. In 1884-87 and in 1887-98 he was a member of the Dominion Parliament. In the latter year he was appointed a puisne judge, and in 1906 Chief Justice, of the Superior Court of Quebec. In 1907 he was knighted. Several times he served as a Royal Commissioner, and was one of the organizers and in 1907 the first president, of the Antialcoholic League. In 1911 he was appointed Lieutenant Governor of Quebec.

LANGEN, lang'en, JOSEPH (1837-1901). A German theologian born at Cologne. He was educated at Bonn, was ordained to the Roman Catholic priesthood in 1859, and became assistant professor in 1864, and professor of New Testament exegesis in 1867, at the University of Bonn. For supporting Johann Dillinger (q.v.) he was excommunicated by the Vatican and, although he subsequently left the Old Catholic movement, he was not reconciled to the Roman church. He became known chiefly through his published works, which include: *Die deuterokanonischen Stücke des Buches Esther* (1862), *Grundriss der Einleitung in das Neue Testament* (1868; 2d ed., 1873); *Das vatikanische Dogma von dem Universalepiskopat und der Unfehlbarkeit des Papstes* (4 vols., 1871-76; 2d ed., 1876), *Geschichte der römischen Kirche bis zum Innozenz* (4 vols., 1881-93), his most famous work, *Die Klemensromane* (1890).

LANGENBECK, län'g'e-bék, BERNHARD RUDOLPH VON (1810-87). A German surgeon, nephew and pupil of Konrad Johann Martin Langenbeck, born at Pardingbüttel. He studied at Göttingen, then visited France and England, and, after teaching for some time at Göttingen, was called in 1842 to the chair of surgery in the University of Kiel. In 1847 he succeeded Diefenbach at the Berlin Clinical Institute of Surgery. He soon acquired a world-wide reputation, first through skill and success in operations for harelip, then in plastic surgery of the nose, eyelid, and lip, and finally by his noted methods of resection (q.v.), in which only the diseased or injured part of a bone is removed, instead of amputation of the entire limb. For services in the war with Denmark a grant of nobility was accorded him, and he received in 1866 the highest medical rank the Prussian army affords. Langenbeck was in active medical military service during the German campaigns of 1866 and 1870-71. Beginning with 1860, Langenbeck edited, with Billroth and Gurlt, the *Archiv für klinische Chirurgie*, and he published, besides numerous papers on surgical topics, *Chirurgische Beobachtungen aus dem Kriege* (Berlin, 1874).

LANGENBECK, KARL (1861-). An American ceramic chemist. He was born at Cincinnati, Ohio, and was educated in the College of Pharmacy of that city and at the polytechnic schools of Zurich, Switzerland, and Charlottenburg, Germany. He was superintendent of the Rookwood Pottery in Cincinnati in 1885-90 and in that connection originated the Rookwood faience and aventurine pottery glazes. He served as professor of chemistry at Miami Medical College in 1888-90, was chemist of the American Encaustic Tiling Company in 1890-93, and manager of the Mosaic Tile Company of Zanesville, Ohio, and New York City from 1894

to 1904. He directed a ceramic laboratory in Boston after 1904 and was associate editor of the *Journal of Industrial and Engineering Chemistry* after 1908. He is author of *The Chemistry of Pottery* (1895).

LANGENBECK, KONRAD JOHANN MARTIN (1776-1851). A German surgeon, born at Hornburg and educated at Jena, Vienna, and Würzburg. He received his degree at Göttingen (1802) and afterward was appointed a professor there (1804). He was famed for his swift and unerring use of the knife and for his success as a teacher. He edited the *Bibliothek für Chirurgie und Ophthalmologie* (1806-28), the organ of the surgical and optical clinic, which he founded in 1807, and wrote widely on general and special surgery.—His son, MAXIMILIAN ADOLF LANGENBECK (1818-77), born at Göttingen, was also famed as surgeon and oculist. He studied there and at Paris, Vienna, and Berlin for eight years and from 1846 to 1848 was professor at Göttingen. He wrote *Klinische Beiträge* (1849) and *Die Insolation des menschlichen Auges* (1859).

LANGENBIELAU, lāng'en-bē'lou. A group of industrial villages in the Province of Silesia, 35 miles southwest of Breslau. There are extensive cotton, linen, and woolen weaving, bleaching, and dyeing establishments, and manufactures of color goods, starch, sugar, chemicals, and lumber. Pop., 1900, 19,127, 1910, 18,514.

LANGENDIJK, lāng'en-dik, PIETER (1683-1756). A Dutch poet and playwright, born at Haarlem. He lived at The Hague, at Amsterdam, and at Haarlem after 1722, and was by profession a designer in a damask factory. He wrote several dramas, and some of his farces still have a place on the Dutch stage. It was a time when everything French was admired and imitated, and Langendijk felt this influence strongly. His works include the following comedies: *Die Zwaetser* (1712), *Arlequyn Actionist* (1720); *Xantippe of het booze wyf des filosoofs Socrates beteugeld*; *Spiegel der vaderlandsche Koopheden*. He also wrote poems, published in his collected works, *Gedichten* (1760). An edition of his plays appeared in 1851. Consult W. J. A. Jonckbloet, *Geschiedenis der Nederlandsche Letterkunde*, vol. v (Groningen, 1887-92).

LANGENSALZA, lāng'en-zāl'tsa. A town in the Prussian Province of Erfurt, situated on the Salza, 25 miles northwest of Erfurt (Map: Prussia, D 3). It has an old castle, now used as an administration building, and an eighteenth-century Rathaus. The chief manufactures are cotton goods, yarn, cloth, agricultural machinery, fire engines, tobacco, tinware, and bricks. In the vicinity are saline springs. Langensalza has been the scene of numerous battles, of which the best known is that of June 27, 1866, in which the Hanoverians defeated the Prussians, but were compelled to capitulate two days later. Pop., 1900, 11,926; 1910, 12,663.

LANGENSCHIEDT, lāng'en-shit, GUSTAV (1832-95). A German linguist and publisher, born in Berlin. He traveled extensively and about 1856 brought out, with the French teacher of languages Charles Toussaint, *Französische Unterrichtsbrieft zum Selbststudium*, a system of self-instruction in French, which met with a great success and was continued yearly (62d ed., 1902). Using the same method, which is founded on that of Hamilton-Jacotot, he published a book

for self-instruction in English. In this he was assisted by Karl van Dalen and Henry Lloyd. The "Jacotot" method" was applied by others to different languages, and, in accord with it, Langenscheidt published the Sachs-Villatte *Französisch-deutsches Wörterbuch* (1868-94) and the Muret-Sanders *Englisch-deutsches Wörterbuch* (1891-1901).

LANGEN-SCHWALBACH. See SCHWALBACH.

LANGERON, lānz'h'rōn', ANDRAULT, COUNT DE (1763-1831). A Russian general, born in Paris. He went with Rochambeau to America and in 1789 entered the Russian service, taking part in the campaign against Sweden and the Turks. At Austerlitz he was a general of division. From 1807 to 1810 he was engaged against the Turks, doing good work at Silistria in the latter year. He fought against Napoleon I during the invasion of Russia, participated in the battle of the Katzbach (q.v.), and distinguished himself in the battle of Leipzig (1813). In 1814 he stormed the heights of Montmartre and entered Paris with the Allies. In 1822 he was appointed Governor-General of New Russia. His last military service was in the Turkish War of 1828-29. He died in St. Petersburg.

LANGEVIN, lānz'h'vān', SIR HECTOR LOUIS (1826-1906). A French-Canadian politician, born in Quebec. He studied at the Quebec Seminary until 1846, when he entered a law office in Montreal and in 1850 was called to the bar. He became editor of the *Mélanges Reliqués* in 1847 and in 1857 of the *Courrier du Canada*. In the latter year he was elected mayor of Quebec and also a Conservative member of the Legislative Assembly, in which capacity he supported the administration. In 1864 he became a queen's counsel and solicitor-general in the Conservative Taché-Macdonald administration. Two years later he was appointed Postmaster-General. He was active in furthering the cause of confederation, was a delegate to the Charlottetown conference, and to the Quebec conference in 1864; was one of the commissioners sent to London to complete the organization of the Dominion of Canada in 1869, and, after his return, became Secretary of State in the first administration under Confederation. He became Minister of Public Works in 1869, Postmaster-General in 1878, and again Minister of Public Works in 1879. In 1891 he resigned his post under grave charges of malfeasance in office and in 1896 retired from public life.

LANGEVIN, JEAN FRANÇOIS PIERRE LA FORCE (1821-92). A French-Canadian Roman Catholic bishop, born in Quebec. He was educated at the seminary there, became a priest in 1844, and Bishop of Rimouski (1867). He returned to his alma mater in 1840 to teach higher mathematics and remained there nine years, during part of which he was at the head of the normal school in connection with Laval University (1858-69). He wrote: *Traité de calcul différentiel* (1848); *Histoire du Canada en tableaux* (1860); *Cours de pédagogie* (1865).

LANGHAM, lāng'am, SIMON DE (1310-76). An English archbishop and chancellor, born at Langham in Rutland. He was a monk in Westminster before 1346 and became prior and abbot. In 1360 he was Lord High Treasurer of England, a year later was Bishop of Ely, was Lord Chancellor in 1363, and in 1366 was Archbishop of Canterbury. He drew up the new premonition in

1365 and dismissed Wiclif from the wardenship of Canterbury Hall, Oxford; but, having been made Cardinal by Pope Urban V, he angered the King by accepting the promotion without his leave and was driven from his archbishopric and retired to Avignon. Here he occupied a confidential position with Pope Gregory XI until his death. He made large gifts to Westminster Abbey during his life and by will and has been called its second founder.

LANGHANS, lăng'hăns, JOHANN GOTTHARD (1733-1808). A German architect, born at Landeshut (Silesia). The success of his earlier works at Breslau caused him to be called to Berlin by King Frederick William II in 1786, and he subsequently became director of royal buildings. His structures include the palace of Hatzfeld (Breslau); the Brandenburg Gate (Berlin), a design indirectly inspired by the Propylæa at Athens (1789-93), the marble palace at Potsdam; the Herculesbrücke (bridge) at Berlin, and the theatre and Belvedere at Berlin. —His son, KARL FERDINAND, was also an architect of note.

LANGHORNE, lăng'hôrn, JOHN (1735-79). An English poet, born at Kirkby-Stephen, Westmoreland. He studied at Winton and Appleby, then devoted himself to private teaching, having among his pupils Edmund Cartwright, and went to Cambridge, but did not graduate. Taking orders, he became curate at Dagenham Essex (1761); then curate of St John's, Clerkenwell, London, and he attained some fame by his sentimental poems and romances. A short poem in 1765, entitled "Genius and Valor," defending the Scottish nation against the invective of Churchill's "Prophecy of Famine," is said to have obtained for him the degree of D.D. from Edinburgh. He translated from Bion (1759), published *Poetical Works* (1766), and, with his brother, translated *Plutarch's Lives* (1771), his best-known work, reprinted even to the present day.

LANGIEWICZ, lăng-yě'vich, MARYAN (1827-87). A Polish revolutionist, born at Krotoschin. He studied mathematics at Breslau, traveled through Europe, and in 1860 accompanied Garibaldi in the expedition for the liberation of Sicily and Naples. In 1863 he was leader of the insurgents in the District of Sandomir and was named Dictator of Poland by his troops, but, in scarcely more than a week after taking this office, was twice defeated by the Russians, at Chrobrze and Busk. He retired to Austria, where he was imprisoned for nearly two years. In 1865 he went to Switzerland; then to Paris, where he called himself Langlé; and finally to Turkey, where, after service in the artillery, he died at Constantinople.

LANGLADE, lăng'glăd', CHARLES MICHEL DE (1729-1800). A French-Canadian trader and partisan leader, born at Michilimackinac. Both his mother and his wife were Indians, and he had therefore great influence with the Ottawa, Ojibwa, Potawatami, and other Western tribes, of whom he led the party that took such an important part in the defeat of General Brad-dock in his advance upon Fort Duquesne (1755). His following also appeared at the massacre of Fort William Henry (1757), and he laid an ambush around Wolfe's camp at Montmorency (1759), which failed for want of support. He fought under Montcalm on the Plains of Abraham, Sept. 13, 1759, and under Lévis the following spring at Sainte Foye. After the war

he was as faithful to the British as he had been to the French, warned the frontier forts of Pontiac's plans (1763), and joined Burgoyne's army with a large company of Indians (1777). For his services during the Revolutionary War the English government gave him a pension and made him Indian superintendent, with headquarters at Green Bay, where he is still revered as a man of upright and amiable character, "the founder and father of Wisconsin."

LANGLAND, WILLIAM (c.1330-1400). An English poet, born probably about 1330 at Cleobury Mortimer, South Shropshire. He seems to have studied with the Benedictine monks at Great Malvern. He became a tonsured clerk and early drifted to London, where he lived in perpetual poverty, exercising minor functions in the Church. Towards the end of his life he probably returned to the west. He died about 1400. Very little, however, is known about him beyond what may be inferred from his great poem *Piers Plowman*, on which he was engaged probably from 1362 to 1392. The poem opens beautifully with the plowman falling asleep among the Malvern hills and seeing in vision a field full of folk engaged in various occupations. The poem is thus an allegory of life. It contains much vigorous satire on abuses in church and state. Unlike most of the poems of the time, it is written in the alliterative measure that characterized English verse before the Norman Conquest. Into this poem Langland put all his best thought, laboring upon it the rest of his life, as is shown by the many variations in the existing manuscripts, numbering 45 or more. These manuscripts fall into three groups, known as the A, B, and C texts, which are assigned respectively to 1362, 1377, and 1392. This poem should not be confounded with the *Creed of Piers Plowman*, written about 1394 by another hand. Excepting Chaucer, Langland was the greatest English poet of the fourteenth century. His was one of the earliest and most eloquent cries from an oppressed people. It has been contended that Langland was also the author of *Richard the Redeless*, a poem written to remonstrate with Richard II.

Bibliography. Skeat's edition of the three texts of *Piers Plowman* (Oxford, 1886), and his edition of the B text for school use (ib., 1888); Jusserand, *Piers Plowman: A Contribution to the History of English Mysticism* (trans., New York, 1894); id., *A Literary History of the English People* (ib., 1895); *The Vision and Creed of Piers Plowman*, edited by Wright (new ed., London, 1897); *Vision of William Concerning Piers the Plowman*, edited by W. W. Skeat (2 vols., Oxford, 1898); C. W. Stubbs, *The Christ of English Poetry* (New York, 1906).

LANGLES, lăng'glēs', LOUIS MATHIEU (1763-1824). A French Orientalist. He studied Oriental languages at Paris and in 1787 translated *Lamartine's Institutes* from the Persian. In 1789-90 he edited the Manchu-French dictionary of Father Amyot (q.v.) and in 1795 was appointed first administrator and professor of Persian in the School of Oriental Languages. This school, founded by the government as the result of his efforts, represents his chief service to Oriental studies. He was the founder of the Geographical Society of Paris and wrote a number of works on Oriental literature.

LANGLEY, JOHN NEWPORT (1852-). An English physiologist, born at Newbury, Berkshire. He was educated at Exeter Grammar

School and at St. John's College, Cambridge; was lecturer at Trinity College, Cambridge (of which he was a fellow), from 1884 to 1903, and also university lecturer during the same period, and became professor of physiology in the university, where he was also a member of the council in 1898-1900. He was royal medalist (1892) and vice president (1904-05) of the Royal Society, president of the Neurological Society of Great Britain (1893) and of Section I of the British Association (1899); received the Baly medal of the Royal College of Physicians (1903); and was chosen a member of various Continental and American scientific societies. Besides serving as editor of the *Journal of Physiology*, he published numerous papers, including many in the *Proceedings* of the Royal Society. He received honorary degrees from St. Andrews and Dublin universities.

LANGLEY, SAMUEL PIERPONT (1834-1906). An American astronomer, physicist, and a pioneer in the design and construction of aeroplanes, as well as in the investigation of the phenomena of aerial locomotion. He was born at Roxbury, Mass., was educated at the Boston Latin School, studied in Europe, and for a time practiced architecture and civil engineering. In 1865 he became an assistant astronomer at the Observatory, later in the same year assistant professor of mathematics in the United States Naval Academy, and in 1867 director of the Allegheny Observatory. After 1887 he was secretary of the Smithsonian Institution. His solar observations, made at Pike's Peak in 1878, at Mount Etna in 1878-79, and at Mount Whitney, Cal., in 1881, added greatly to our knowledge of the phenomena of solar heat. Langley also invented the bolometer, a very delicate instrument for the measurement of radiant heat. At Washington he established the Astrophysical Observatory and the National Zoological Park. In 1887 he served as president of the American Association for the Advancement of Science; he was a member of many important foreign scientific societies, received honorary degrees from Oxford, Cambridge, Harvard, Princeton, Yale, and other universities, and was awarded the Janssen medal of the Institute of France, the Rumford medal of the Royal Society of London, and the Henry Draper medal of the National (United States) Academy of Sciences. For several years Langley gave much study to aerial locomotion, and in 1896 a motor-driven aeroplane designed and constructed by him accomplished for the first time on record a sustained flight. Further experiments in 1903 with a full-sized machine were hardly as successful, but no inherent defect in the apparatus was shown. Criticism and lack of support led to the abandonment of these experiments, which undoubtedly would have resulted successfully had they been persevered in. In fact, in 1914 the original machine, with slight changes, actually was flown at Hammondsport, N. Y. For some time all aeronautical engineers and scientists had recognized the correctness of Langley's reasoning and fundamental ideas as well as the value of his scientific contributions to modern aeronautical science. See AERONAUTICS.

LANGLEY AÉRODYNAMICAL LABORATORY. See AERONAUTICS; SMITHSONIAN INSTITUTION.

LANGLOIS, lán'glwá', HIPPOLYTE (1839-1912). A French soldier, born at Besançon. After studying at the Ecole Polytechnique at Paris, he was made a sublieutenant in the ar-

tillery in 1858. During the Franco-Prussian War in 1870 he served with the army of Metz, holding the rank of captain. In 1887 he was appointed professor of artillery at the Ecole Supérieure de Guerre, of which he was commandant (1898-1900). Promoted to general of brigade in 1894 and to general of division in 1898, he was made commander of the famous Twentieth Army Corps at Nancy in 1901, and in the following year he became a member of the superior council of war. In 1904 he retired from the army. He was elected to the French Senate in 1906, was chosen a member of the French Academy in 1907, and was also a Grand Officer of the Legion of Honor. His military writings, which gave him an international reputation, include: *L'Artillerie de campagne en liaison avec les autres armes* (1891-92), his greatest work; *Manœuvre d'un détachement de toutes armes avec feux réels* (1897), *Etude sur le terrain* (1903), *Guerre turco-russe et anglo-boer* (1903).

LANGLOIS, VICTOR (1829-69). A French Orientalist, born at Dieppe. After devoting considerable time to the study of Oriental languages, he was sent in 1852-53 by the Minister of Public Instruction to Cilicia and Armenia, where he made extensive excavations and collected numerous antiquities, including 80 new Greek inscriptions and a collection of figures in terra cotta found in the cemetery of Tarsus in Cilicia. He next went to Italy (1857 and 1861), where, besides procuring documents concerning the relations between France and Armenia during the Crusades, he collected data for an important work on the doctrines of the Mechitarists, the most celebrated of the Armenian monks. In addition to this work, which appeared in 1862, he published, among other works, *Le trésor des chartes d'Arménie* (1863) and *Le mont Athos et ses monastères* (1867), with a lithographic copy of the Greek manuscript of the geography of Ptolemy (twelfth century), found by him in the libraries of the monasteries of Mount Athos, Turkey. He also undertook the publication of *Collection des historiens anciens et modernes de l'Arménie* (1869), but his death occurred just after he finished the first volume.

LANGNAU . . . A town in the Canton of Bern, Switzerland, situated on the Ilfis, 13 miles east of Bern (Map Switzerland, B 2). Langnau is the principal market for the cheese and linen thread of the Emmenthal. It makes cloth, leather, tobacco, and bleached goods. Pop., 1900, 8200, 1910, 8584.

LANGRAND-DUMONCEAU, lán'grán'-du-môn'só', ANDREAS, COUNT (1826-1900). A Belgian adventurer, born in Bossem. He attracted attention by his plan for bringing capital under the influence of the Church. Thanks to the patronage of many high Church dignitaries, he was enabled to found a bank in Brussels and often rendered financial assistance to the Pope, who, in recognition of his services, made him Count. Langrand-Dumonceau was intrusted with an enormous amount of capital by many wealthy people and was elected to the Belgian Parliament. He carried on his business transactions till 1870, when he became bankrupt. While judicial inquiries were being made into his affairs, he managed to abscond. He was, however, sentenced in *contumaciam* to 15 years' imprisonment for embezzlement.

LANGREO, lán-grá'ó. A mining town of north Spain, in the Province of Oviedo, situated

among the mountains, 18 miles from the coast and 10 miles east of Oviedo. In the neighborhood are important coal and iron mines, and the town has iron foundries and considerable iron manufactures. Much fruit, cider, wheat, and hemp are also produced. Pop., 1900, 18,751; 1910, 25,444

LANGRES, lán'gr'. An ancient town of France, a first-class fortress and capital of the arrondissement of the same name, on the Marne, in the Department of Haute-Marne (Map: France, N., 1. 5). It is situated on a plateau 21 miles south-southeast of Chaumont. It has the twelfth-century cathedral of St. Mammes in Transition style, numerous convents, a collection of a museum with collections of old tapestries and paintings, a library of 10,000 volumes, and a monument to Diderot, a native of Langres. The chief industry is the manufacture of cutlery, for which the town is famous. The trade is chiefly in iron products, grain, oil, and textiles. The town has been the seat of a bishopric since the Roman period. Pop., 1901, 9021, 1911, 6335. Langres is believed to have derived its name from the Celtic people Lingones, who occupied it in Cæsar's time, when it was known as Andomatunnum.

LANGSHAN (Chinese name). A breed of domestic fowls, the smallest in the Asiatic class. They are active and lively, the cocks weigh 10 pounds and the hens 7 pounds. Howard describes two varieties, the black and the white. The black, in plumage of neck, back, saddle, and sickles, is glossy metallic black, with greenish sheen. breast, primaries, secondaries, tail, fluff, shank, and toe feathers, black; the under color is black or dark slate. The white Langshan is pure white throughout. This is an old and well-known breed, highly esteemed for all good qualities.

LANGSIDE. A village 2 miles south of Glasgow, Scotland, where on May 13, 1568, a skirmish was fought between the forces of Mary Stuart (q.v.) and those of the Regent Murray. On May 2, 1568, Mary had escaped from the castle of Lochleven where she had been a prisoner, and immediately revoked the abdication which she had been compelled to make in favor of her infant son, James VI (later James I of England). An army of 6000 men, commanded by Argyle, collected about her, but she was unable to take Dunbar Castle and so marched in the direction of Dumbarton. At Langside Murray, with 4500 men, stopped the army of Mary and defeated it in three-quarters of an hour. Mary fled to England after the battle, crossing the border on May 16, 1568. In England she was kept a prisoner until her execution, in 1587.

LANGSON, lán'g'son'. The capital of the province of the same name in Tongking, French Indo-China, situated about 80 miles northeast of Hanoi, with which it is connected by rail (Map: Burma, E 2). It is divided into two parts, one contains the strong citadel, and the other the commercial and residential town. It is a station on the railway line from Hanoi to Yunanfu, China, which was completed in 1906. The town was taken by the French, after a hard struggle, in 1885.

LANGSTAFF, LAUNCELOT, ESQ. See IRVING, WASHINGTON.

LANGSTON, JOHN MERCER (1829-97). An American educator, born in Louisa Co., Va. He was born in slavery, the son of a white man, Ralph Quarles, by a negro slave, but was eman-

cipated when he was six years old. He was reared by Col. William D. Gooch as a member of his own family and for several years did not know of his negro blood. He graduated at Oberlin College in 1849 and from the theological department there in 1853. In 1854 he was admitted to the bar in Ohio, where for the next 13 years he practiced his profession and held several town offices. In 1869 he became professor of law at Howard University, was appointed dean of the law department, and in 1873 became vice president of the university. In 1871 he had been appointed a member of the board of health of the District of Columbia and in 1871 was elected secretary of the District. He was United States Minister and Consul General in Haiti from 1877 to 1885 and upon his return accepted the presidency of the Virginia Normal and Collegiate Institute in Petersburg. Elected from Virginia to the National House of Representatives in 1888, he was not seated till two years later, after a contest. He published a volume of addresses, *Freedom and Citizenship* (1883).

LANGTON, STEPHEN (?-1228). Archbishop of Canterbury from 1207 to 1228. Langton was undoubtedly an Englishman, but he received the chief part of his education in Paris. After Innocent III became Pope, he summoned Langton to Rome and made him a cardinal in 1206. In 1205 there had been a disputed election to the see of Canterbury, and the whole matter was taken on appeal to Rome. Innocent compelled the 16 monks of Christ Church, who represented the cathedral chapter at Rome, to elect Stephen Langton, and the Pope consecrated him at Viterbo on June 17, 1207. His appointment, nevertheless, was resisted by King John, who threatened to outlaw any one who would dare to acknowledge Stephen as Archbishop. For six years Langton was excluded from the see, to which he was only admitted in 1213 (See JOHN). The reconciliation of 1213 was but temporary. In the conflict of John with his barons Langton was a warm partisan of the latter, and it was he who, at the Council of St. Albans in 1213, produced the old charter of liberties of Henry I, upon which the Magna Charta was based, of which latter document he was the first of the subscribing witnesses. When the Pope, acting on the representation of John and espousing his cause as that of a vassal of the holy see, excommunicated the barons, Langton refused to publish the excommunication and was in consequence suspended from his functions in 1215. He was restored, probably two years later, and after the accession of Henry III he was reinstated (1218) in the see of Canterbury, from which time he occupied himself with attempts at reform, both in church and state, till his death, which took place July 9, 1228. Langton was a learned and able writer; but most of his writings are lost, and the chief trace which he has left in sacred literature is the division of the Bible into chapters. Consult: Hook, *Lives of the Archbishops of Canterbury*, vol. ii (London, 1862); William Stubbs, *Historical Introduction to the Rolls Series* (London, 1902); Davis, *England under the Normans and Angevins* (New York, 1905).

LANGTRY, MRS. LILLIE (1852-). An English actress, born at Le Breton, the daughter of a clergyman in the island of Jersey. She was married in 1874 to Edward Langtry, and, as the "Jersey Lily," was noted for her beauty in English society before she began her career upon

the stage. Her debut before the London public (December, 1881) was at the Haymarket Theatre in *She Stoops to Conquer*. The following autumn she made her first appearance in America, with a popular success which was repeated subsequently, though the critics generally condemned her interpretations of rôles such as Pauline in the *Lady of Lyons* or Rosalind in *As You Like It*. Mr. Langtry died in 1897, and in 1899 she was married to Sir Hugo Gerald de Bathe, Bart. In 1903 she starred in America in *The Crossways*, written by her in collaboration with J. Hartley Manners. She returned to America in 1906 and again in 1912, appearing in vaudeville.

LANGUAGE (OF., Fr. *language*, from Lat. *lingua*, tongue, language, OLat. *dngua*, tongue; connected with Goth. *tungo*, OHG. *zunga*, Ger. *Zunge*, AS. *tunge*, Eng. *tongue*). In its scientific meaning, a system of symbols employed to communicate thoughts and feelings. Sounds, signs, bodily attitudes, or gestures may form the material of a language, if they are used with the intent to communicate thoughts and feelings. Indeed, there are in existence several highly complex languages in which gestures are employed as symbols (see **GESTURE**, **GESTURE LANGUAGE**), although the paramount form of language is articulate speech. The scientific study of language is concerned with (1) the structure and history of languages, or philology (q.v.), (2) the physical basis of vocalization, or phonetics (q.v.), and (3) the psychology of language. Both philology and phonetics are, it will be observed, limited to articulate speech; psychology, on the other hand, finds its subject matter in all forms of language, although speech is by far the most important.

Psychologically language is regarded as a product of the collective or social mind. By comparing the languages of human society at various levels of human evolution, we may thus expect to gain an insight into the course of mental development in the history of the race. Rightly to interpret the results of such a comparison, however, we must assume that thought and language developed side by side. Thought, it is true, is in our own case possible without language; psychological experiments have shown that thought and reasoning may go on in terms of kinesthetic sensations of the vocal organs, of bodily attitudes, and of visual and auditory images, in such cases these mental processes themselves become the symbols which carry the meaning of the thought. But there is no reason for believing that language supervened upon, or took the place of, any previous system of symbols. Rather must we suppose that language and reasoning are two aspects of the same phase of mental development, and that each implies the other. Evidence for this assumption is gained from a study of the vocal utterances of animals and from the development of language in the child. The primitive sounds in animals are cries of pain and rage and result from movements which express emotion (see **EXPRESSIVE MOVEMENTS**); all vocal utterances in animals may be regarded as having developed from these primitive sounds. Some birds, to be sure, imitate sounds, and parrots even articulate but there is no shred of evidence that the imitation is other than instinctive. Again, the efforts made to find evidence of a conscious use of expressive sounds in the apes have thus far ended in failure.

Finally, animal psychologists are universally of the opinion that animals have no free ideas. The old conundrum—Why don't the animals talk? Because they have nothing to say—contains a sound psychology; if the animals thought, they would talk; since they do not talk, they do not either think. Similarly, the first cries of the child are cries of pain, anger, hunger, discomfort, and the like, which are again to be classed as sounds resulting from expressive movements. At a later stage of development appears the childish babble, a continued reiteration of nonsense sounds, of which many interpretations have been given. It has been urged most frequently that these sounds are the result of imitation, but it seems more reasonable to regard them as "echo" gestures and "echo" speech, i.e., as reflex expressions of emotion aroused by the sight of the same expression of the same emotion in others. Finally, it may be said that there is no ground for believing that the child in the babble stage invents words. Indeed, the most careful studies indicate that there is no conscious imitation or invention of words by the child until speech has been acquired. Since, then, it may be safely assumed that the development of language and of thought go hand in hand, a comparative study of language from the psychological point of view promises the solution of two problems of especial interest—that of the origin of language, which marks an epoch in mental development, and that of the growth of language, which underlies the growth of thought.

The Origin of Language. The problem of the origin of language was, in the seventeenth and eighteenth centuries, the most important problem of what was commonly called the philosophy of language. While the metaphysical discussions of this period included the possibility of a natural origin and development of language, it was generally held that speech is either the product of divine ordinance, a miracle, as was, e.g., the confusion of tongues at the tower of Babel, or that it is the invention of man, that its origin was a matter of social convenience. Neither of these views, however, is scientific, neither offers a true explanation, and both have long since been given up. The theory of evolution revived the view of language as a product of natural origin and development. The first hypothesis proposed is the imitation theory (derisively called by its opponents the "moo-moo" theory). It was assumed by the Stoics (with whom the theory originated) that the first words were imitative of natural sounds, e.g., words like *hiss*, *buzz*, and *roar*. They believed, however, that other words arose through the application of the principles of analogy and opposition. In more modern times this principle of onomatopoeia was supplemented by the theory that the feeling aroused by the word accorded with the feeling aroused by perception of the object. The strength of the theory lies in its original contention rather than in its logical additions; but it offers difficulties which make its acceptance impossible. In the first place, not only are the imitative words in any language too few in number to satisfy the theory, but there are also fewer words of this character in primitive languages than in modern. Furthermore, many onomatopoeic words in modern languages are derived from non-onomatopoeic; as, e.g., "thunder," which comes from the root "tan," meaning "to

stretch.' Again, imitation of natural sounds before man had learned to speak is inconceivable; he would neither know that he could produce sounds, nor would he be able to make the necessary nervous and muscular coordinations. According to a second hypothesis, known as the interjection theory (natural-sound theory, "pooh-pooh" theory), the first words are interjections or exclamations. The perception of an object arouses an emotion which finds its expression in a sound, and this sound becomes associated to the object. There are many variations of the theory, and the principal arguments in its behalf are taken from the interpretations of the child's babble before he learns to speak. While it avoids one of the objections to the imitation theory, in that interjections are natural sounds and may originate in reflexes, it is still open to the objection that there are not in any language enough interjections to render the hypothesis tenable. Moreover, even if it should be granted that the babble of infants is of an interjectional character, this phenomenon is still not primitive, but corresponds to a stage in the maturing of an inherited speech mechanism. A third theory, as definitely psychological as the two former are logical, may be called the gesture-speech theory. The origin of language is traced, not to the utterance of particular sounds at a particular time, but to the expressive movements which are shared by man with the animals. The impulse to communicate, a determining tendency (q.v.) which distinguishes language from expressive movements, arises through social imitation of expression and through the sympathetic feelings awakened by social intercourse. It is, then, but a step from expressive movements to gesture, which is psychologically the first language, and the "origin" of speech is bound up with the origin of gesture language. Certain mimic gestures which involved the muscles of face, mouth, and tongue were accompanied by sound. At first the sound was the incidental, meaningless accompaniment of the gesture. Eventually it derived a meaning from other concomitant gestures, and only gradually, under the influence of continued social intercourse, did it manifest its superiority to gesture and acquire its independence. It may be said, in the large, that the word heard has never had any other than a derivative and symbolic meaning, and that the self-sufficiency of the word-gesture, combined sound and movement, is the origin of language.

The Growth of Language. The growth of language consists not only in the addition of new symbols to old, but also in permutations of the old. Moreover, a symbol may gradually change its meaning. These two modifications are, as a rule, independent of each other, and while the former is of psychological interest, it is in the study and interpretation of the course of semantic change, or change in meaning, that the laws governing the growth of mind are revealed. The general law of development is that thought tends from the concrete to the abstract. For example, a word that designates a perceptive process like smell or taste, which has a meaning more or less abstract, may have been derived from the name of a substance that could be smelled or tasted. Thus, Ger. *riechen*, smell, is ultimately the same with *rauchen*, smoke; and Eng. *smell* is connected with *smoulder*, and with Dan. *smul*, dust. The Lat. *sapio*, to taste, *sapor*, taste, are connected with *sapa*, must,

sapo, soap, *sebum*, tallow, i.e., with names of substances that are readily diluted or liquefied. A further stage of the same process is illustrated by Eng. *feel*, Ger. *fühlen*, which at first meant 'to touch'; cf. Lat. *palma*, Eng. *palm* of the hand. Not until the eighteenth century were the words reserved for the affective or "subjective" side of mind, and even now the shift of meaning is by no means complete.

Finally, it should be said that, in addition to the problems discussed above, psychology has the more immediate problem of describing the mental processes involved in communication and thought at every stage of their development. Briefly it is found that words themselves are represented in consciousness by auditory, visual, and articulatory perceptions and ideas; that their meanings are at first represented in perceptions and ideas by a contextual fringe of supplementary images, while later this context may lapse from consciousness and a nonconscious, nervous set or attitude may take its place; and lastly, that the explanation of the change in meaning as thought develops is to be found in terms of associative and determining tendencies.

Bibliography. Muller, *The Science of Language* (London, 1861); W. D. Whitney, *Life and Growth of Language* (New York, 1875; new ed., 1902); Curti, *Die Sprachschöpfung* (Würzburg, 1890); Compayré, *L'Évolution intellectuelle et morale de l'enfant* (Paris, 1893); Ribot, *L'Évolution des idées générales* (ib., 1897); Chamberlain, *The Child* (New York, 1900); Letourneau, "L'Évolution du langage," in *Revue mensuelle de l'École d'Anthropologie de Paris*, vol. x (Paris, 1900); Wallace, "Expressiveness in Speech," in *Studies Scientific and Social*, vol. ii (London, 1900); Sweet, *History of Language* (ib., 1900); W. D. Whitney, *Language and the Study of Language* (8th ed., New York, 1901); Nausesse, *Denken, Sprechen und Lehren* (2 vols., Berlin, 1901-06); Wundt, *Völkerpsychologie* (3d ed., Leipzig, 1911-12); Odier, *Essai d'analyse psychologique du mécanisme du langage dans la compréhension* (Bern, 1905); Ravizza, *Psicologia della lingua* (Turin, 1905); Vossler, *Sprache als Schöpfung und Entwicklung* (Heidelberg, 1905); Baumann, *Sprachpsychologie und Sprachunterricht* (Halle, 1905); Bernard-Leroy, *Le langage, essai sur la psychologie normale et pathologique de cette fonction* (Paris, 1905); Finck, *Die Aufgabe und Gliederung der Sprachwissenschaft* (Halle, 1905); Mauthner, *Die Sprache* (Frankfurt, 1906); id., *Beiträge zu einer Kritik der Sprache* (2d ed., 3 vols., Stuttgart, 1906-13); Nogier, *Physiologie du langage* (Paris, 1907); Ginniken, *Principes de linguistique psychologique* (ib., 1907); Tucker, *Introduction to the Natural History of Language* (London, 1908); Secheyay, *Programme et méthodes de la linguistique théorique, psychologie du langage* (Paris, 1908); Francke, *Die praktische Sprachlernung auf Grund der Psychologie und der Physiologie der Sprache dargestellt*, edited by Jespersen (4th ed., Leipzig, 1908); Meringer, *Aus dem Leben der Sprache* (Berlin, 1908); Macnamara, *Human Speech* (London, 1908); Pick, *Ueber das Sprachverständnis* (Leipzig, 1909); Finck, *Die Sprachstämme des Erbkreises* (ib., 1909); Passy, *Petite phonétique comparée des principales langues européennes* (2d ed., ib., 1912).

LANGUAGE, SIGN. See GESTURE LANGUAGE; SIGN LANGUAGE.

LANGUAGE, UNIVERSAL. See **UNIVERSAL LANGUAGE.**

LANGUAGE OF FLOWERS. See **FLOWERS, LANGUAGE OF**

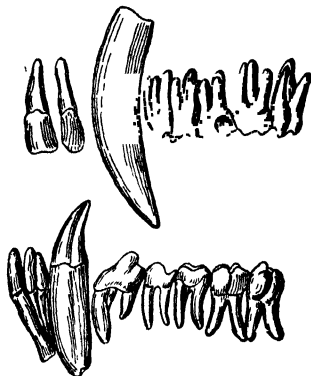
LANGUED, lāngd (from Fr. *langue*, tongue). In heraldry (q.v.), a term used for the tongue of a beast or bird when that differs in tincture from the animal's body. It is then said to be langued of that color.

LANGUEDOC, lāng-dōk' (OF., from *langue*, language + *de*, of + Prov. *oc*, yes, from Lat. *hoc*, this, the Provençal equivalent of OF. *oui*, oil, Fr. *oui*, yes, from Lat. *hoc illud*, this (is) that, whence the Old French language was termed *Langue d'oui*, *Langue d'oïl*). A name given in the later Middle Ages and down to the French Revolution to a province in the south of France, bounded on the north by Auvergne and Lyonnais, on the east by the river Rhone, on the south by the Mediterranean and the counties of Foix and Roussillon, and on the west by Gascony and Guienne. The region is traversed through its whole length, from the northeast to southwest, by the Cévennes (q.v.) Languedoc included what are now the departments of Lozère, Gard, Aude, Hérault, Tarn and part of Haute-Loire, Ardèche, Haute-Garonne, Tarn-et-Garonne, Ariège and Pyrénées-Orientales. The capital of Languedoc was Toulouse. The counts of Toulouse, whose history is connected with the Albigensian troubles, ruled over Languedoc, which was reunited with the French crown in 1271. Consult De Vic and Vaissète, *Histoire générale de la province de Languedoc avec des notes et les pièces justificatives*, vols i-xvi (Toulouse, 1872-1904), and J. Tissier, "Les sources de l'histoire de Languedoc d'après les inventaires des archives narbonnaises," in *Commission de Narbonne, Bulletin*, vol. xi (1903).

LANGUET, lān'gā', HUBERT (1518-81). A French Huguenot writer and diplomat, born at Vitteaux. He studied at the University of Poitiers from 1536 to 1539, then at the universities of Bologna and Padua. In 1549, through the influence of Melanchthon, he became a Protestant. He traveled extensively through France, Germany, Italy, and Sweden. In 1559 he entered the service of the Elector of Saxony, Augustus I, whom he represented at the court of France almost continuously from 1561 to 1572. At the time of the Massacre of St Bartholomew's Day he was in France and had difficulty in escaping. He withdrew to the Netherlands during the latter part of his life. For a short time he was adviser to William the Silent, of England. His interesting, valuable, and voluminous correspondence throws much light upon the history of the sixteenth century. The work by which Languet is best known, but the authorship of which is disputed, is *Vindiciæ contra Tyrannos, sive de Principis in Populum Populique in Principem Legitima Potestate*. *Stephano Junio Bruto Celta Auctore* (c.1579).

LANGUR, lān-gōōr'. A monkey of the Oriental genus *Pygathrix* or *Semnopithecus*. This name is given in northern India, where these monkeys are most typical and familiar. In Ceylon they are called wanderoos, and in Malayan countries lutongs. Over 50 species and subspecies are differentiated, ranging from the Indus and even Tibet as far south as Borneo and Java. All are of comparatively large size, with slender, loose bodies, the hind limbs longer than the fore, the tail very long and often

tufted, eyebrows bristly, and no cheek pouches. This last feature seems to be correlated with the fact that the stomach is divided into a number of pouches or sacs, much like that of a ruminant. This accords with their prevailing diet of leaves and green shoots, although in cul-



TEETH OF A LANGUR.

Compare illustration under MONKEY

tivated districts they feed greedily upon grain and vegetables. The habits of few species are well known.

Hanuman, Sacred, or Entellus Monkey. The typical and most familiar of these monkeys is the hanuman (*Pygathrix entellus*), to which the native name langur originally applied. Its proper home is in the northern half of peninsular India—the valley of the Ganges and thence to Bombay. The body is about 2 feet long and the tail about three feet, so that the total length is nearly 5 feet (See *Plate of MONKEYS OF THE OLD WORLD*). The movements are not quick and restless, as in most monkeys, but rather slow and sedate, yet it is able to make prodigious leaps, and fatal fights sometimes happen when two troops meet and quarrel over proprietary rights in feeding grounds or seek to capture one another's females. This monkey is held in superstitious reverence by the northern Hindus, it is often to be seen exhibiting impudent familiarity in the precincts of temples, indeed, temples are often specially dedicated to it, and hospitals are erected for its reception when sick or wounded. The Hindu peasant, when his garden is plundered or his house robbed by troops of them, fears, as an act of sacrilege, to drive them away, but he is grateful to any one else who will do so, and the veneration is steadily weakening as European influence spreads (See *HANUMAN*). These monkeys are of great assistance to the tiger hunters. Blanford describes how, safely ensconced in a lofty tree, or jumping from one tree to another as the tiger moves, the monkey, by gesture and cry—a guttural note, very different from its ordinary joyous and often musical whoop—points out the position of his enemy in the thickets or grass beneath, seeming to recognize the hunter as an ally to be assisted in a warfare against a common foe. The familiar ways and easily studied habits of these sacred monkeys have been well detailed in Kipling, *Beast and Man in India* (London, 1891).

A very closely related species of langur (*Pygathrix ochistacea*) dwells in the Himalayas, between 5000 and 12,000 feet of elevation, and

is often seen dashing about among snow-laden branches. They gather into large troops in the autumn and then become a nuisance to hunters by alarming the game as soon as they catch sight of a man with a gun. Another species (*Pygathrix lamia*) inhabits the still higher ranges of Tibet. In southern India and Ceylon several species exist in large numbers and are so bold and familiar about the villages that were they not harmless they might be a serious menace to the people. These are often called wanderers (qv) indiscriminately and are all held more or less sacred by the Hindus.

Other Langurs. The foregoing species form a group agreeing in the fact that the hair upon the forehead radiates forward from a central point. The negro monkey, or budeng (*Pygathrix aurata*, or *maurus*), is a well-known type of a group characterized by the fact that the projecting hairs of the forehead radiate from two points. When adult, this monkey, which is common in Java, Sumatra, and the Malay Peninsula, is fully black, but its young are of a light sandy hue. A closely related species is rust red all its life. The Malay name for all this kind of monkeys is lutong, of which various other species are known, including a crested one of curiously variable coloring. Another large group of langurs is characterized by the fact that the hair of the crown is directed backward with no sign of parting, instead of radiating from one or more points on the forehead. A common example is the Nilgiri langur (*Pygathrix johni*) of the forested hills of southern India, which is becoming rare because constantly hunted by the natives for the sale of its beautiful skin and also for food. The purple-faced monkey of Ceylon is an allied species—a small, active, intelligent creature, a great favorite in captivity for its gentleness and cleanly ways. Several other species of India, Assam, and the Malay Peninsula are called leaf monkeys by the English colonists, and along the coast of Cochinchina is to be found the brightly colored douc (*Pygathrix nemæus*), which is very little known.

Bibliography. Tennent, *Ceylon* (London, 1859); Jerdon, *Mammals of India* (ib., 1874); Blanford, *Fauna of British India: Mammals* (ib., 1888-91); Forbes, *Monkeys*, in Allen's "Naturalists' Series" (ib., 1894); Lydekker, *Royal Natural History*, vol. i (ib., 1895); Elliot, *A Review of the Primates* (New York, 1913).

LANGWERTH VON SIMMERN, lang'vërt fôn zim'mërn, HEINRICH, BARON (1833-). A German politician and author, born in Hanover. From 1858 to 1861 in the government service of his native country, he was very active, after the annexation of Hanover in 1866, in the interest of the German-Hanoverian faction and endeavored to accentuate its German patriotism, first by his contributions to the public press and from 1880 to 1890 as a member of the Reichstag. A partial list of his publications includes: *Für Oesterreich* (1866); *Von 1806 bis 1866: Zur Vorgeschichte des neuen deutschen Reichs* (1872); *Die deutsch-hannoversche Partei* (1885); *Aus meinem Leben* (1898); *England in Sudafrika* (1902); *Deutschtum und Anglophobie* (1903-04); *Der englische Nationalcharakter* (1906); *Aus Krieg und Frieden* (1906).

LANIARD, lan'yard (formerly *lannier*, *lanier*, from OF *laniere*, Fr. *lanière*, throng, cord for a lanner, from OF., Fr. *lanier*, sort of hawk, from

Lat. *lanarius*, relating to a butcher, from *lanius*, butcher, from *laniare*, to rend; influenced in popular etymology by Eng. *yard*). A small rope used for joining two objects, especially the joining of a large rope to some permanent fixture, as the laniards of a ship's rigging, which are ropes reeving through dead eyes to form a purchase or tackle which keeps the heavy shrouds and stays taut and yet furnishes sufficient elasticity to prevent straining them.

LANIARD KNOT. See KNOTTING AND SPLICING.

LANIER, là-nër', or **LANIÈRE**, NICHOLAS (1588-1666). An English musician, descended from a French family whose members had for several generations been musicians of the royal household in England. By 1604 Nicholas was a member of the court musicians, and his fortune was thereafter identified with that of Charles I and James I. Under both monarchs he held the post of master of the King's music. He wrote the music for a number of masques (notably *Lovers Made Men*, by Ben Jonson) and in them introduced the *style recitativo* for the first time in England. In addition to being a composer, Lanier was a singer and a flutist of ability and took an active part in the masques for which he had composed the music. As a painter and a collector of works of art he was well known, and in 1625 Charles I sent him to Italy to collect pictures and statues, some of which (e.g., Mantegna's "Triumph of Cæsar") are now at Hampton Court. Portraits of Lanier were painted by Van Dyck, Jan Livens, Isaac Oliver, and by himself. His music can be found in *Select Musicales Ayres and Dialogues* (1653), *The Musical Companion* (1667), *The Treasury of Music* (1669); etc. Lanier died in London.

LANIER, SIDNEY (1842-81). An American musician and poet, born at Macon, Ga., Feb. 3, 1842. He died at Lynn, N. C., Sept. 7, 1881. He was of Huguenot stock and inherited great musical ability. His education was obtained at Oglethorpe College, Georgia, where he graduated and served as tutor for one year before he entered the Confederate army. His main experiences during the war were connected with blockade running, but he was much exposed to physical hardships and suffered imprisonment for several months, with the result that he developed consumption. Immediately after the war he went to Alabama, where he was a clerk in a shop and a teacher; but his bad health forced him to return to Macon, where he studied and practiced law with his father until 1873. Then his two dominant passions, poetry and music, overmastered him, and he decided to give his life to them. He had previously published (1867) a rather crude romance entitled *Tiger Lilies*, but its want of success had not discouraged him. He went to Baltimore and obtained a position as first flute in the Peabody Symphony Orchestra, and he also saw something of musical life in New York, his ability, especially for the flute, being everywhere recognized. His literary ability was encouraged by friends like Bayard Taylor, and in 1876 he was invited to write a poem for the Centennial Exposition. A year later a volume of his poems appeared. In 1879 he was made lecturer on English literature at Johns Hopkins University, where he delivered courses afterward published as *The Science of English Verse* (1880) and *The English Novel* (1883). Throughout these years his strength had been steadily waning, and he

had frequently been obliged to seek health in Florida and other favorable regions. It was on such a visit to North Carolina that he finally succumbed. Considering the short time he devoted entirely to literature and the unfavorable conditions under which he worked, his achievement was as remarkable as that of any other American of his generation. Besides the books already named, he adapted Froissart, Percy, and the *Mabinogion* to youthful readers, wrote a guidebook to Florida, and did other miscellaneous work which has recently been gathered and put in permanent form. It is difficult to say whether Lanier's genius was greater for music than for poetry. In his poems and in his writings about poetry the element of music is everywhere and in *The Science of English Verse* rather tends to make less useful and perhaps less trustworthy a remarkably subtle and stimulating book, which is nevertheless of distinctly greater value than the lectures on the English novel. In his other prose works, especially in the *Letters*, Lanier makes the appeal to chosen readers that we always expect from the prose of a genuine poet. And this Lanier was, even if the quality of his work was not infrequently injured by a straining after effect. No American since Poe has been so fully dominated by the idea of beauty in art. Lanier added an ethical element foreign to Poe, and it is a question whether here again there is not a lack of that fusion of powers and qualities that is essential to the production of perfect poetry. Be this as it may, it is quite certain that Lanier must stand in the front rank of the American poets of the last quarter of the nineteenth century. Among his best-known poems may be mentioned: "Corn"; "The Song of the Chatahoochee"; "The Marshes of Glynn"; the cantata sung at the Centennial. His interesting letters have also been published, as well as his complete poems, edited by his widow, Mary Day Lanier, with a memoir by William Hayes Ward (New York, 1881, 1884, 1906), containing a bibliography. His *Shakespeare and his Forerunners* was published in New York (1902). Good selections from his prose and verse appeared in the *Lanier Book* (New York, 1904). Consult Mims, *Sidney Lanier* (Boston, 1905).

LANIVIUM, lá-nív'i-úm. See LANUVIUM.

LANJUINAIS, lán'zhwé'ná', JEAN DENIS, COUNT DE (1753-1827). A French statesman and publicist, born at Rennes. He made an early success at the bar of Rennes and in 1775 became professor of ecclesiastical law in the university there. In 1789 he was chosen deputy to the States-General. He distinguished himself as one of the most advanced members of the party that desired a constitutional monarchy in France, and was one of the founders of the Breton Club which later developed into the Feuillants and Jacobins. In June, 1790, Lanjuinais demanded the abolition of all titles, and in May, 1791, the admission of negroes to all the rights of citizenship. He was returned a member of the Legislative Assembly which succeeded the Constituent Assembly in 1791; but the radical reform movement, of which he had been a leader, was now getting beyond his control, and this gave the color of reaction to his rôle in the new Assembly. In the Convention he acted with the Girondists and protested with vehemence against the act of accusation of the King, against the right of the Assembly to judge him, and against the forms employed, yet at

the last voted with those who found the King guilty under the accusation, but he voted for banishment as the last means to save the King's life. He was eventually proscribed and his arrest ordered, but he escaped and concealed himself at Rennes until the fall of Robespierre. In 1795 he was chosen a member of the Council of Ancients, and in 1800 he became a member of the Senate, where he opposed Bonaparte's monarchical schemes. In 1808 he was created Count, however, and a member of the historical section of the Institute. He favored the deposition of Napoleon and was created a peer at the First Restoration. During the Hundred Days he became President of the Chamber of Deputies, but on the Second Restoration resumed his seat in the Chamber of Peers and was a staunch advocate of constitutionalism against reaction and clericalism. He was a member of the tribunal which tried Marshal Ney and one of the 17 who voted for exile. He died in Paris, Jan. 13, 1827. His political, legal, and historical works were collected and published in four volumes (Paris, 1832), with a life by his son. These include: *Constitutions de la nation française* (1815) and *De l'organisation municipale en France* (1821).—His second son, VICTOR AMBROSE, VICOMTE DE LANJUINAIS, was born in Paris in 1802, studied law, and in 1837-48 was a member of the Chamber of Deputies. In 1848 he was elected to the Constituent Assembly and subsequently to the Legislative body. He was Minister of Commerce and Agriculture from June to October, 1849, resigning, however, to become a member of the opposition. He was imprisoned at the time of the coup d'état of December, 1851. In 1863 he entered the Corps Législatif. He died Jan. 2, 1869. He was the author of several works on political economy.

LANKESTER, lán'kes-tér, EDWIN (1814-74). An English scientist, born at Melton in Suffolk. He was enabled by the generosity of friends to take a short medical course at the University of London, and later went to Heidelberg, where he secured the degree of M.D. On his return to England in 1840 he settled in London and for a number of years devoted most of his time to literary work and to lecturing on scientific subjects. In 1850 he became professor of natural history in New College, London, and in 1853 lectured on anatomy and physiology at the Grosvenor Place School of Medicine. He took a keen interest in the question of public health and strove to arouse general interest in the causes of disease. Many of his works treated of scientific subjects in a popular manner, and he began the distribution of pamphlets dealing with the subject of sanitation, which later was carried on by the National Health Society. From 1853 to 1871 he was an editor of the *Quarterly Journal of Microscopical Science* (with George Busk, 1853-68; with his son, 1869-71); wrote the article on Rotifera for the *Cyclopædia of Anatomy and Physiology*; and published *Lives of Naturalists* (1842), *Memoirs of John Ray* (1845), and *Half-Hours with the Microscope* (1859). For his son, see the following article.

LANKESTER, SIR EDWIN RAY (1847-). An English zoölogist, son of Edwin Lankester. He was born in London and was educated at St. Paul's School, Downing College, Cambridge, and Christ Church, Oxford. He became fellow and lecturer in Exeter College (Oxford) in 1872; was professor of zoölogy and compara-

tive anatomy in the University of London (1874-90); in 1882 became regius professor of natural history at Edinburgh; from 1891 to 1898 served as Linacre professor of comparative anatomy at Oxford, and in 1898-1900 was Fullerian professor of physiology and comparative anatomy in the Royal Institution of London. In 1884 he founded and in 1892 became president of the Marine Biological Association (Plymouth Laboratory), and he was director of the department of natural history of the British Museum in 1898-1907, his removal from that position causing considerable comment. He was president of the British Association at the 1906 meeting and was honored by numerous medals and degrees and by membership in many scientific societies at home and abroad. In 1907 he was created Knight Commander of the Bath. His writings include: *A Monograph of the Cephalaspidean Fishes* (1870), *Developmental History of the Mollusca* (1875); *Degeneration* (1880); *Limulus. An Arachnid* (1881); *The Advancement of Science* (1889), collected essays; *Zoological Articles* (1891); (ed.) *A Treatise on Zoology* (1900-09), *Extinct Animals* (1905), *Nature and Man* (1905); *The Kingdom of Man* (1907); *Science from an Easy Chair* (1st series, 1910, 2d series, 1912). After 1869 he edited the *Quarterly Journal of Microscopical Science* (jointly with his father, 1869-71).

LAN'MAN, CHARLES (1819-95). An American journalist, author, and artist. He was born at Monroe, Mich., but was educated at an academy, while living with his Judge James Lanman, at Norwich, 1835 to 1845 he was a clerk in New York. In the latter year he returned to Michigan and edited the *Monroe Gazette*. Afterward he was connected with papers in Cincinnati and New York, and finally joined the staff of the *National Intelligencer* in Washington, D. C. At various times he was librarian of the War Department, librarian of copyrights, private secretary to Daniel Webster when the latter was Secretary of State, examiner of depositories for the Southern States, and librarian successively of the Interior Department and of the House of Representatives. He prepared the first Congressional biographical directory. From 1871 to 1882 he was Secretary of the Japanese Legation, and while serving in this capacity published *Japanese in America* (1872) and *Leading Men of Japan* (1883), besides painting many landscapes. He made many sketching trips and early called attention to the beauty of the Saguenay River in a *Tour to the River Saguenay* (1848) and to western North Carolina in *Letters from the Alleghany Mountains* (1849). He was a prolific writer, responsible for some 32 volumes.

LANMAN, lán'man, CHARLES ROCKWELL (1850-). An American Sanskrit scholar. He was born at Norwich, Conn., in 1850; graduated at Yale College in 1871; remained there studying Sanskrit and linguistic science until 1873, when he received his Ph.D. degree; continued his Oriental studies at Berlin, Tübingen, and Leipzig, accepted a fellowship at Johns Hopkins University in 1876 and in 1880 was called to Harvard University as professor of Sanskrit. He published in 1880 an important work entitled *Noun-Inflection in the Veda*, and in 1884 and again in 1888 a *Sanskrit Reader with Vocabulary and Notes*. He was president of the American Philological Association for the year 1889-90, and edited vols. x-xiv of its

Transactions, and was vice president of the American Oriental Society from 1897 to 1907 and president in 1907. He projected the *Harvard Oriental Series* (1891), to which he contributed a translation of *Rāja-Qekhara's Karpūra-mañjarī* (1900), and for which he edited Whitney's translation of the *Atharva-Veda* (2 vols., 1905). Yale University gave him the degree of doctor of laws in 1902 and Aberdeen in 1906. In 1909 he published a useful article entitled "Pāli Book-Titles and their Brief Designations," which appeared in the *Proceedings of the American Academy of Arts and Sciences*, vol. xlv, pp. 661-707 (Boston).

LANMAN, JOSEPH (1811-74). An American naval officer, born in Norwich, Conn. He entered the navy in 1825, passed the midshipman grade in 1831, and was commissioned lieutenant in 1835, commander in 1855, and captain in 1861. In 1862 he was raised to the rank of commodore and was assigned to the North Atlantic squadron in the following year. During the two attacks on Fort Fisher he commanded the second division of the flotilla, leading the advance with the flagship *Minnesota*, and won high commendation from Admiral Porter. In 1867 he was made rear admiral and was put in charge of the Portsmouth Navy Yard. From 1869 to 1871 he commanded the South Atlantic squadron and was retired in 1872.

LAN'NER (OF. *lanier, lannier, laner, lenier*, Fr. *lanier*, sort of hawk). A small falcon of southern Europe and Asia. It is "noble," was formerly used for falconry, and was the sacred falcon of ancient Egypt. A very closely related form is the prairie falcon (*Falco mexicanus*) of the western United States, which is abundant on the plains.

LANNER, JOSEPH (1801-43). An Austrian composer of dance music, the creator of the modern Vienna waltz. He was born at Vienna, showed early a great talent for music, and became proficient in playing the violin and in composition without any instruction. He organized a quartet, in which the elder Strauss played the viola, and for which Lanner arranged potpourris from favorite operas and composed marches and other light music. Their performances in the public gardens of Vienna became very popular, and gradually their organization assumed the proportions of a large orchestra, which was in great demand at all important places of amusement, and finally at the court balls, where Lanner conducted the dance music alternately with Strauss. He gave the waltz its present extended form, developing it from the old-fashioned *ländler*, the genuine Vienna national dance, and may virtually be considered the founder of all modern dance music. His published compositions in that line, and his marches number 208 works. Consult Fritz Lange, *Josef Lanner und Johann Strauss* (Vienna, 1904).

LANNES, lán, JEAN, DUKE OF MONTEBELLO (1769-1809). A marshal of the first French Empire, born at Lectoure in the Department of Gers. He entered the army in 1792 and by 1795 commanded a brigade with the rank of colonel. The reorganization which then took place led to his discharge, but he followed Napoleon to Italy as a volunteer, and by his bravery and audacity at Millesimo, Mantua, and Arcole, won notice, and was made in 1797 brigadier general. He took part in the Egyptian expedition and

became general of division. On returning to France he rendered Napoleon service in the execution of the coup d'état of 18th Brumaire. In the second Italian campaign he won an important victory at Montebello (1800), from which he derived his title of Duke. He bore a principal share in the battle of Marengo and was made French plenipotentiary to Portugal (1801). In 1804 he was created a marshal of the Empire, and he distinguished himself at Austerlitz, at Jena, where he commanded the centre, at Eylau and Friedland. Being sent to Spain during the Spanish campaign, he defeated Castaños at Tudela, Nov. 23, 1808, and then besieged Saragossa. In 1809 he again fought against the Austrians and commanded the centre at Aspern (May 22), where he had both legs carried away by a cannon shot. He was removed to Vienna and died there May 31, 1809. He was interred in the Panthéon in Paris, but later his body was removed to the cemetery Père-Lachaise. He is considered as one of the most able marshals of Napoleon, among whose favorites he was included and by whom he was often intrusted with difficult tasks. Consult Perin, *Vie militaire de J. Lannes* (Paris, 1810), and Thoumas, *Le maréchal Lannes* (ib., 1891).

LANOLIN (from Lat. *lana*, wool + *oleum*, oil), or **ADEPS LANÆ HYDROSUS**. The purified fat of the wool of the sheep, mixed with not more than 30 per cent of water. It is a white or yellowish white, fatty substance, insoluble in water, not subject to decomposition, and not irritating to the skin. It is used as an emollient and also as a base for various ointments. Its chief constituents are cholesterin and the ethers of stearic, palmitic, oleic, valerianic, and other acids.

LA NOUE, *lâ nōw*, **FRANÇOIS DE**, called **BRAS DE FER** (1531-91). A celebrated Huguenot soldier, born at Nantes. He was educated in arms, and, after seeing service in Italy, was placed at the court of Henry II at the age of 18 and there became a Protestant through the influence of D'Andelot. After the Massacre of Vassy he joined the great Condé. He took part in the battle of Dreux, where Condé was made prisoner, and assisted Coligny in conducting the retreat. He afterward served under various Huguenot leaders and gained a great reputation for bravery, prudence, and humanity. In 1569 he was captured at Moncontour, but was soon after exchanged. In 1570 he lost his left arm at the siege of Fontenay-le-Comte and had its place supplied with an iron one—hence his sobriquet. In 1571 La Noue went to the assistance of the Dutch Protestants and was captured by Alva at Mons and sent a prisoner to Charles IX of France. He was kindly treated by the King. Escaping before the Massacre of St. Bartholomew, La Noue rallied the Huguenots after that fatal event and fortified La Rochelle. After the Peace of Bergerac put an end to the religious war for the time, La Noue commanded in Holland (1578). In 1580, however, he was again captured by the Spaniards and remained for five years a prisoner in the castle of Limburg, where he composed his *Discours politiques et militaires* (Basel, 1587). In 1586 he aided in the defense of Geneva against the Duke of Savoy, and a little later he was permitted to return to his own country. He immediately resumed command in the Huguenot army under Henry of Navarre and rendered brilliant service at the siege of Paris, at Arques,

and at Ivry. He was mortally wounded at the siege of Lamballe in Brittany and died a few days later at Moncontour, Aug. 4, 1591. His *Correspondance* was published at Paris (1854). Consult Vinien, *Les héros de la réforme: Fr. de la Noue* (Paris, 1875), and Hauser, *François de La Noue* (ib., 1892).

LANSDALE, *lânzd'al*. A borough in Montgomery Co., Pa., 20 miles northwest of Philadelphia, on the Philadelphia and Reading Railroad (Map: Pennsylvania, L 7). There are important industrial interests, including agricultural implement works, a canning factory, foundries, brickyards, a silk mill, and manufactories of cigars, stoves, shirts, rope, iron drain pipe, and glue. The electric-light plant is owned by the borough. Pop., 1900, 2754; 1910, 3551.

LANS'DELL, **HENRY** (1841-). An English clergyman, editor, and traveler, born at Tenterden, Kent. He was educated by his father and at St. John's (Divinity) College, Highbury, was ordained in 1867, and the following year was made a curate at Greenwich. He was stationed successively at Blackheath, Eltham, and Plumstead from 1885 until 1891, with intermissions of travel. Between 1870 and 1904 he traveled in every country of Europe and Asia, five countries of Africa, and across America. His journeys were undertaken largely for the purpose of visiting missionary stations (in 1888-90 he visited 170 stations), but he also inspected foreign prisons and made collections of plants. He became a fellow of the Royal Geographical Society. He was founder and editor (1875-86) of the *Clergyman's Magazine* and the author of *Through Siberia* (1882), *Through Central-Asia* (1887), *Chinese Central Asia* (1893), *The Sacred Tenth* (1906), *The Tithe in Scripture* (1908).

LANSDOWNE. A borough in Delaware Co., Pa., 5 miles southwest of Philadelphia, on the Pennsylvania Railroad. The noteworthy features include the borough hall, new high school, public library, Twentieth Century Club, and St. Philomena and Friends schools. It is essentially a residential suburb of Philadelphia, but has some manufactures, particularly of steel. Pop., 1900, 2630; 1910, 4066.

LANS'DOWNE, **GEORGE GRANVILLE** (or **GREENVILLE**), **LORD** (1667-1735). An English poet and dramatist. He went to school in France, but graduated at Trinity College, Cambridge. Born into a family conspicuous for loyalty to the Stuart kings, he dedicated his earliest verse to the Duchess of York, afterward the wife of James II. During the ascendancy of the Whig party he found consolation in the society of greater poets—Dryden, Pope, Addison, Wycherley—and in writing successfully for the stage, witness the opera, *The British Enchanters* (presented 1706, published 1710), the tragedy *Herack Love* (presented and published 1698), and *She Gallants*, later entitled *Once a Lover and Always a Lover* (presented 1696; published 1696). By the death of an elder brother he became the head of his family, was created a peer of the realm, and taken into the Privy Council of Queen Anne (1712); but three years later, under George I, he was suspected of Jacobite plotting and sent to the Tower for two years. In mature manhood Granville was a consistent Tory, not a rabid Jacobite; but, fearful of further imprisonment and desirous of economizing, he withdrew to Paris (1722), where he remained for 10 years, engaged chiefly in

writing elegant prose and revising his inferior poetry. On his return to England he spent the remainder of his life in retirement, a polished, generous, lovable gentleman, patron of the poets and the last Lord Lansdowne. His *Complete Works* were published in 1732

LANDSDOWNE, HENRY CHARLES KEITH PETTY-FITZMAURICE, fifth MARQUIS OF (1845–) A British statesman. The eldest son of the fourth Marquis, he succeeded to the ancient family titles and estates on his father's death in 1866. After studying at Eton and at Balliol College, Oxford, and serving as a captain of yeomanry cavalry, he entered early on a political career as a Liberal. From 1868 to 1872 he was a Lord of the Treasury and from 1872 to 1874 Undersecretary of State for War. In 1880 he received the appointment of Undersecretary of State for India from Mr Gladstone, but resigned shortly afterward as a protest against the government's Irish Bill on Compensation for Disturbance. In 1883–88 he was Governor-General of Canada, the period was marked by the completion of the Canadian Pacific Railway, an amicable settlement of the North American fisheries dispute, and by the suppression of Riel's Rebellion. From Canada he proceeded as Viceroy to India, where he remained until 1893. In 1895 he entered the Marquis of Salisbury's cabinet as Secretary of State for War, and in 1900 was appointed Secretary of State for Foreign Affairs. He retired in December, 1905. His administration was signalized by the alliance with Japan, by treaties of 1902 and 1905, and the establishment of intimate relations with France by the agreement of April, 1904. For several years he was leader of the Unionist party in the House of Lords, and in 1906 he led the attack in that House against the Liberal Education Bill. In 1909 he was the author of the famous motion which called for the submission to the people of the Lloyd-George (qv) budget of that year. In May, 1915, Lord Lansdowne became Minister without portfolio in the coalition cabinet formed by Asquith.

LANDSDOWNE, HENRY PETTY-FITZMAURICE, third MARQUIS OF (1780–1863). An English statesman. He was born at Lansdowne House, London, July 2, 1780, and was a younger son of Earl Shelburne, Premier of George III, who received the coronet of Marquis in 1784. Lord Henry Petty was sent to Westminster School and afterward to Edinburgh. He took his degree at Trinity College, Cambridge, in 1801, and, when barely of age, entered Parliament as member for Calne. He turned his attention to finance and on Pitt's death became, at the age of 25, Chancellor of the Exchequer in the administration of Lord Grenville. In 1809 he succeeded his half brother in the marquissate, became one of the heads of the Liberal party in the House of Lords, and during a long opposition was a consistent advocate of parliamentary reform, the abolition of slavery, Catholic emancipation, and free trade, all of which he lived to see triumphant. He was Home Secretary in 1827, and when the Whigs, after their long exclusion from power, came into office with Earl Grey at their head, Lansdowne became Lord President of the Council, which post he held with a brief interval from November, 1830, to September, 1841, resuming it in 1846, after the fall of the Peel ministry, and again filling it until 1852. He then formally bade farewell to

office and resigned the leadership of the House of Lords, but consented to hold a seat without office in the Aberdeen cabinet and again in the first administration of Lord Palmerston. After the death of the Duke of Wellington he became the patriarch of the Upper House and the personal friend and adviser of the Queen. He had a keen regard and a cultivated taste for literature and was a generous patron of men of letters. He died Jan 31, 1863.

LANDSDOWNE, WILLIAM PETTY, MARQUIS OF. See SHELburne

LANSFORD. A borough in Carbon Co., Pa., 35 miles (direct) north of Reading, on the Lehigh and New England Railroad (Map: Pennsylvania, K 5). It has extensive coal-mining interests, being situated in the productive anthracite fields of the State, and manufactures of silk knit goods, shirts, garage supplies, etc. About a mile from the borough is an immense electric-power plant. Settled in 1845, Lansford was incorporated in 1876, the charter of that year now operating to provide for a government vested in a burgess, chosen every three years, and a council, which controls appointments to the most of the important administrative offices. Pop., 1900, 4888, 1910, 8321.

LANSING. The capital of the State of Michigan, in Ingham County, at the confluence of the Grand and Cedar rivers, 88 miles northwest of Detroit and 64 miles east by south of Grand Rapids, on the Pere Marquette, the Grand Trunk, the Lake Shore and Michigan Southern, the Michigan United Traction, and the Michigan Central railroads (Map: Michigan, E 6). The rivers are here spanned by several bridges. Lansing occupies an elevated site on a plateau rising from the water level and is laid out with broad and well-shaded streets. The capitol, built in 1872–79, at a cost of \$1,500,000, stands on an eminence in a park of 12 acres near the centre of the city. The State Library contains about 105,000 volumes. Other important buildings are the city hall, the city hospital, high school, Carnegie library, Government building, the State School for the Blind, State Industrial School for Boys, and, in the suburbs, the State Agricultural College, with 60 buildings and a farm of about 684 acres. Among the recreation grounds are Pine Lake and Waverly Park, both summer resorts, and Moores, Potters, and five other parks. A United States Weather Bureau Station is maintained here. The city has abundant water power from the two rivers, the Grand River having a fall of 18 feet. There are more than 200 manufacturing concerns, employing about 11,000 persons, and whose annual product is valued at \$30,000,000. The manufactures include agricultural implements, automobiles, traction engines, gas and gasoline engines, building materials, malleable castings, furniture, wagons, silk and woolen goods, store fixtures, electric supplies, cut glass, candy, ice cream, knit goods, cigars, cement blocks, wheelbarrows, automobile accessories, etc. The government, under a charter of 1897, is vested in a mayor, elected for two years, a unicameral council, and administrative officials, the majority of whom are appointed by the executive, subject to the consent of the council. The clerk, treasurer, and assessors are chosen by popular election. The city owns and operates the water works, supplied from artesian wells and valued at \$300,000, and the electric-light plant. Settled in 1837, Lansing was laid out for the State

capital in 1847, when a single family occupied the site. It was chartered as a city in 1859. Pop., 1900, 16,485; 1910, 31,229; 1914 (U. S. est.). 37 512

LANSING, JOHN (1754-1829). An American jurist, born at Albany, N. Y. He was privately educated and studied law with Robert Yates (q.v.) in his native city and with James Duane in New York, where he was established in practice at the outbreak of the Revolution. During the war he served for about a year (1776-77) as military secretary to Gen. Philip Schuyler. He served in the New York State Assembly in 1780-86 and was also a member of the Continental Congress in 1784-88. In 1786 he was named by the council of appointment mayor of Albany and succeeded John Jay as a member of the Massachusetts-New York boundary commission. In March, 1787, while still a member of Congress, he was appointed, with Yates and Hamilton, to represent New York in the Constitutional Convention, but left it with the first named, after two months' participation, on the grounds that they had not been delegated to form a new Constitution, but only to amend the Articles of Confederation. In June, 1788, with George Clinton and Melancthon Smith (q.v.), he led the opposition to the ratification of the Constitution by New York at the Poughkeepsie Convention. After serving on the New York-Vermont boundary commission, he was, in September, 1790, named a justice of the New York Supreme Court. He succeeded Yates as Chief Justice in 1798 and in 1801 succeeded Robert R. Livingston (q.v.) as Chancellor, which position he retained until 1814, when he in turn was succeeded by James Kent (q.v.). He declined the Anti-Federalist nomination for Governor of New York in 1804. He disappeared mysteriously in New York City on Dec. 12, 1829, after having left his hotel to post a letter on a dock near by.

LANSING, ROBERT (1864-). An American lawyer and authority on international law. Born at Watertown, N. Y., he graduated from Amherst College in 1886 and was admitted to the bar in 1889. From then until 1907 he was a member of the law firm of Lansing & Lansing at Watertown. He served as associate counsel for the United States in the Bering Sea Arbitration in 1892-93, as counsel for the United States Bering Sea Claims Commission in 1896-97, as solicitor for the government before the Alaskan Boundary Tribunal in 1903, as counsel for the North Atlantic Fisheries in the Arbitration at The Hague in 1909-10, and as agent of the United States in the American and British Claims Arbitration in 1912-14. In 1914 Lansing was appointed by President Wilson counselor to the State Department, and in June, 1915, on Mr. Bryan's resignation, he became acting Secretary. He aided greatly in preparing important notes to Great Britain and Germany on American neutral rights. He became associate editor of the *American Journal of International Law*, and with Gary M. Jones is author of *Government: Its Origin, Growth, and Form in the United States* (1902).

LANSINGBURG. A former village in Rensselaer Co., N. Y., annexed to the city of Troy (q.v.) on Jan. 1, 1901.

LANSING MAN. The name given to a partially dismembered human skeleton found in 1902 under 20 feet of earth near the Missouri River, at Lansing, Kans. There was a great

deal of discussion at the time as to the antiquity of the find, but it is now generally agreed that it does not represent an ancient type of man. The skull is in the United States National Museum. Consult Alès Hrdlička, "Skeletal Remains Suggesting or Attributed to Early Man in North America," in *Bureau of American Ethnology, Bulletin*, No. 33 (Washington, 1907).

LANSON, LÂN'SON', GUSTAVE (1857-). A French literary critic, born at Orléans. He was educated at the Orléans and Charlemagne lycées, and after completing the work of the École Normale Supérieure received the degree of doctor of letters. He became professor of rhetoric at Michelet, Charlemagne, and Louis le Grand lycées, and in 1900 was appointed to a chair of French literature at the Sorbonne. His method, one of historical and bibliographical research, has been adopted in several universities in the United States, where he conducted classes at one time. He became an Officer of the Legion of Honor. His writings include: *Nivelle de la chaussée et la comédie larmoyante* (1887); *Bossuet* (1895); *Histoire de la littérature française* (1894, 11th ed., 1909); *Manuel bibliographique de la littérature française, 1500-1900* (4 vols., 1910-12), *Boulevard, Corneille, Voltaire*, in the "Great Writers Series," for Hachette. He edited *Les lettres philosophiques de Voltaire* (1908).

LANSQUENET, lãns'ke-nèt (Fr., from Ger. *Landsknecht*, foot soldier). A game of cards, played with six full packs, and so called from the fifteenth-century soldiers by whom it was introduced. The banker announces his bet, of which fractional parts are wagered by the other players, or the whole amount may be bet by a single player. The banker draws a card for himself and one for his adversaries and then deals until a card like his own or that of his opponents is turned up. In the former case the dealer wins, and also when the second card dealt matches the first.

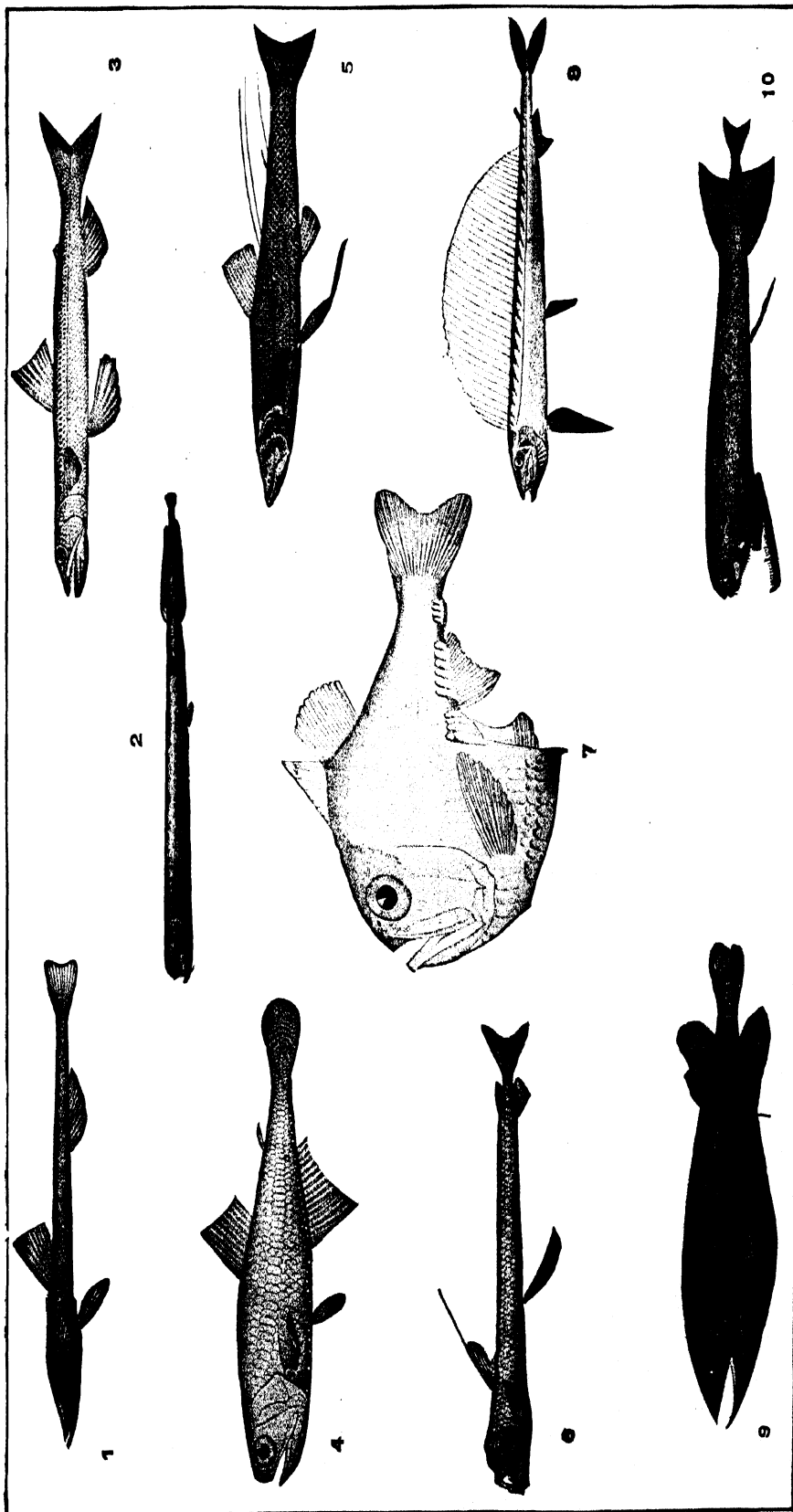
LANSYER, lãn'syá', MAURICE EMMANUEL (1835-83). A French landscape painter, born at Bouin in La Vendée, Brittany. He studied architecture with Viollet-le-Duc, but gave it up to study painting, first with Courbet, and afterward with Harpignies, who taught him landscape. His subjects are mostly taken from Brittany and the neighborhood of Bordeaux, and his later work shows the influence of his early architectural training. Among his paintings are: "September Morning at Douarnenez", "Promenade in Autumn"; "The Dunes of Donville"; "Nôtre Dame de Paris"; "Château de Pierrefonds," at the Luxembourg; "Mont St. Michel." His work is distinguished for fine feeling and brilliant atmosphere.

LANT, or LANCE. A fish. See SAND EEL.

LANTANA (Neo-Lat., coined by Linnæus). A genus of odoriferous, chiefly tropical shrubs, belonging to the family Verbenacæ. The species contain a stimulant essential oil. *Lantana pseudothea*, or *Lippia pseudothea*, is used in Brazil as a substitute for tea. *Lantana camara* and *Lantana mista* are natives of tropical America. *Lantana camara* has been introduced as an ornamental hedge plant into many tropical countries, where it has spread until it has become very troublesome, as in Ceylon, parts of India and Hawaii. In countries where frost holds them in check they are very ornamental plants. They are not hardy north of the Gulf States.

LANTE, lãn'tã, VULLA. Two villas of this

LANTERN FISHES



1. *IPNOPS MURRAYI*, Gulf of Mexico, collected in 955 fathoms.
2. *PHOTONECTES GRACILIS*, collected off Martinique, in 472 fathoms.
3. *SYNODUS FOETENS*, LIZARD FISH, Coast of South Carolina.
4. *TARLETONBEANIA TENUA*.
5. *BATHYPTEROIS QUADRIFILIS*, collected off St. Vincent, W. I.
6. *MALACOSTEUS NIGER*, North Atlantic.

7. *CHAULIODUS SLOANEI*, VIPER-FISH, North Atlantic.
8. *ALPHEUSIUS ANTERIOR*, OCEANIC LANTERN FISH, North Atlantic.
9. *ALPHEUSIUS FEROX*, LANCET FISH, North Atlantic.
10. *CETOMIMUS GILLII*, collected by the Albatross in N. lat. 39° 38', W. long. 71° 24' in 1043 fathoms.

name exist—one in Rome, on the Trastevere side of the Tiber, northwest of the great Villa Corsini, the other at Bagnaia, near Viterbo, about 40 miles north of Rome. The latter is the one generally referred to, and, although one of the smallest of the important villas of the Renaissance, it is regarded with justice as a perfect example of the type. It was built in 1477 for Cardinal Riario, but was in 1566 and thereafter remodeled for the Cardinals Gambara and Montalto from designs by the great architect Vignola, and 100 years later was given by Pope Alexander VII to the Lante family, who have since held it. The gardens are exceptionally beautiful; while they cover less than four acres, with a total length of 775 feet and a width of 245 feet, they are laid out with such skill that they nowhere appear cramped or insignificant. They occupy a wooded slope, forming four terraces; the two *casini*, or dwellings, occupy the second of these, and the lower, or first, terrace in front of them is laid out in parterres, with a fine sculptured fountain in the centre. The upper levels are occupied by plantations of trees, cascades, and summer houses or loggias, all of admirable design. The villa is well preserved and is one of the most charming examples of Italian Renaissance landscape architecture.

LANTERN (from Lat. *lanterna*, *laterna*, from Gk. *λαμπτήρ*, *lamptēr*, torch, from *λάμπειν*, *lamphein*, to shine). In architecture, an ornamental structure raised above adjoining roofs, etc., to give light and ventilation by openings in its sides. In Gothic architecture, a *lantern tower* is frequently placed over the crossing of cruciform churches, its vault being at a considerable height, and the light admitted by windows in the sides, as in the famous example over the crossing of Saint-Ouen at Rouen, and the equally celebrated octagon of Ely Cathedral. The usual English lantern is a lofty square tower over the crossing; the "Bell Harry" tower of Canterbury, and the central towers of York, Lincoln, and Gloucester cathedrals and of many other large churches, are examples. So also the *Cimborio* of Burgos Cathedral in Spain.

The small circular edicule which crowns most modern domes is called a lantern. The earliest of these is that on the dome of the cathedral of Florence; those of St. Peter's, Rome, and St. Paul's, London, are also famous.

LANTERN FISH. A name given to soft-rayed, pelagic fishes, of a provisional order, *Inioi*, in reference to the fact that most of them possess phosphorescent, luminous organs, required by their residence in the dark oceanic abysses. Their general structure is that of isospondylous fishes, which have become degraded or degenerate by an unfavorable environment. Their forms are often most unusual and grotesque, great heads with enormous eyes and large mouths, often studded with formidable teeth, being united with slender and fragile bodies. The bones are weakly ossified, the mesacoracoid is lacking (an eel-like characteristic), and the connection of the shoulder girdle with the cranium is imperfect. Ichthyologists differ as to whether or not the group should be separated from the Isospondyli, and also whether its component parts should be regarded as families or as genera. Jordan and Evermann take the former view and make the first family that of the lizard fishes (*Synodontidae*), including a group of tropical predacious fishes inhabiting sandy bottoms not far from shore, often brightly

colored and lizard-like in form, whence the common name "lagarto" in Spanish America. (See **LIZARD FISH**.) The other families are almost all inhabitants of the abysses, and the species are largely known only by one or a few specimens. The species illustrated upon the accompanying plate are representative of the range of variety in the group. Thus, *Bathypterois quadrifilis*, remarkable for the four long, whitish filaments of its fins (tactile organs of extreme sensibility), is a little fish, nearly black, and dwells in the tropical Atlantic at a depth of 500 to 800 fathoms. Another small, dark-colored bottom fish ($5\frac{1}{2}$ inches) is *Ipnops murrayi*, found widely distributed at a depth of about 2,000 fathoms, which is provided with an extraordinary sensory apparatus. It is eyeless, but the whole top of the flattened head consists of a pair of large, transparent membrane bones, which cover a peculiar divided organ, one-half lying on each side of the median line of the head. This at first was supposed to be a luminous organ, but Mosely has discovered that it represents the lost eyes, each half of the organ having a flattened cornea along the dividing line, and a large retina of complicated structure, adapted to produce an image and to receive especial luminous rays. Referring especially to this fish, Alexander Agassiz has stated that while in some cases the eyes of these migrants from the shores and the surface to the black depths have not been specially modified, in others there have been modifications of a luminous mucous membrane, leading on the one hand to phosphorescent organs more or less specialized, or on the other to such remarkable structures as the eyes of *Ipnops*, intermediate between true eyes and specialized phosphorescent plates. Where the fishes have become blind, the integument, lateral line, and various tactile appendages acquire extraordinary sensibility, as in cave animals (q.v.). The curious miniature of a whale illustrated in Fig. 9 of the Plate is one of the two known species of the genus *Cetomimus*, less than 6 inches long and living at great depths. For an account of Fig. 8, see **LANCET FISH**.

Lantern Fishes Proper. The foregoing species do not possess light-giving organs to any considerable degree, if at all; but most of the group are provided with phosphorescent lanterns. The family *Myctophidae* contains about 100 species, all of small size, carnivorous, and very widely distributed in the open seas. They sometimes come to the surface at night or in stormy weather, but ordinarily dwell in the depths. All have luminous spots or photophores more or less regularly placed along the sides of the body, while larger light-giving glands are lodged in the head, or near the tail, or both. One of the most vivid light bearers is a steel-blue Pacific coast species (*Tarletonbeania temia*), whose light spots are shown in Fig. 4. It also has large functional eyes and crenulated scales, but no lateral line. The name "viper fishes" has been given to the genus represented by a species (*Chauliodus sloanei*), about 12 inches long, discovered on the Banks of Newfoundland. It has both eyes and photophores and also a tactile ray, extending from the dorsal fin. It is also an inhabitant of the North Pacific. Somewhat similar, and highly endowed with luminous organs, is *Photoneustes gracilis*, known only from a single specimen 7 inches long, taken off Martinique, 472 fathoms below the surface. Even more extraordinary is the small black fish

(*Malacoosteus niger*) represented in Fig. 10. It lives in very deep water, yet has large, useful eyes, as well as two "headlights" in the form of strong luminous organs near the eyes, and many photophores on the body. The curious way in which the lower jaw is attached to the skull is unique among fishes. This connection is made by a cylindrical muscular band, which Gunther believes to be contractile, "serving to give the extremity of the mandible power of resistance when the fish has seized its prey," as without such a contrivance so long and slender a bone as the jaw would be broken by the victim's struggles. *Argyropelecus* (Fig. 7) represents a group of fishes, only 2 or 3 inches long, that come to the surface at night and during the day descend into the depths.

Consult the general authorities mentioned under FISH, and especially Goode and Bean, *Oceanic Ichthyology* (Cambridge, 1896), where complete references to the literature relating to deep-sea fishes will be found.

See DEEP-SEA EXPLORATION for the methods by which many of these fishes have been obtained; and LUMINOSITY OF ANIMALS for a more particular account of their light-giving organs.

LANTERN FLY. An insect of the extensive family Fulgoridæ. Some of these insects are among the largest known, but others are quite small. Some look very much like butterflies or moths, while still others greatly resemble Neuroptera. The family has received its common name because of the peculiarly enlarged, misshapen proboscis of some of the tropical forms, which may equal the length of the body and is said by the natives of the tropics to be luminescent—a statement disputed by scientific observers. Many of the species are beautifully and brilliantly colored. Some of them secrete a valuable white wax, in some cases in masses far exceeding the length of the insect. This is collected by the Chinese from a local species and made into candles. All the lantern flies are herbivorous. Some of the exotic species seriously injure crops, but none in the United States does any appreciable damage. They are common in rank herbage and among the reeds of fresh and salt water swamps, and are usually protectively colored. Several forms that are green in summer turn brown with the reeds in the autumn. A pale-green species (*Ormenis septentrionalis*) occurs on the wild grapevine. *Scolops* is a very common, widely distributed North American genus, with a long proboscis like that of the exotic species. The most injurious of the North American species is *Chlorochroa compta*, which feeds on the leaves of corn and the sugar beet in parts of the West.

LANTERN SHELL. A bivalve mollusk of the genus *Anatina*. The shell is oblong, swollen thin, often inequivalve. The species occur in India, the Philippines, New Zealand, and on the west coast of America.

LANTHANUM, lán'thà-nùm. A metallic chemical element, first separated from its concomitant rare-earth elements by Mosander in 1839. It is usually obtained from the mineral cerite, but occurs also in lanthanite, monazite, orthite, and other minerals. The metal itself is best prepared from lanthanum chloride by electrolysis in the absence of water. Originally it was obtained by Mosander by heating lanthanum chloride with metallic potassium. Lanthanum (symbol, La; atomic weight, 139.0) is more readily attacked by atmospheric moisture than

the other metals of the rare-earth group, and hot water is energetically decomposed by it. Its specific gravity is between 6.15 and 6.19, and it melts at 810° C. (1490° F.). First among the lanthanum compounds may be mentioned the oxide, La₂O₃, which exists in two modifications—a lighter crystalline one (specific gravity, 5.3) and a heavier amorphous one (specific gravity, 5.9 to 6.5); the latter is readily changed to the hydroxide, La (OH)₃, by the direct action of water. The chloride of lanthanum, LaCl₃, is a colorless salt very soluble in both water and alcohol, it forms double salts with the chlorides of gold and platinum. Lanthanum nitrate, La(NO₃)₃·6H₂O, is used for stamping incandescent gas mantles, the mark of which is a brown color on the burnt mantle. . . . oxalate, La₂(C₂O₄)₃, which is usually more or less hydrated, appears as a white precipitate that is somewhat more soluble in aqueous acids than the oxalates of the other rare earths. Lanthanum, further, forms a hydride, a carbide, and a nitride. The hydride is formed by the direct action of hydrogen upon the metal at 240° C. (464° F.). The carbide, LaC₂, is formed by strongly heating lanthanum oxide with carbon; water decomposes it, yielding a mixture of acetylene, ethylene, and methane. The nitride, LaN, may be prepared by passing nitrogen gas over metallic lanthanum at a red heat, water decomposes it, yielding ammonia (qv).

LANUGA. See HAIR.

LANUVIUM, or, later, **LANIVIVM**. An old and important city of Latium near the Appian Way, about 19 miles south of Rome, on a hill commanding an extensive view of the sea. It was probably colonized from Alba Longa. It first became important in the fifth century B.C., by the part it took against Rome as one of the 30 cities of the Latin League. Afterward, in the wars between Rome and the Æqui and the Volsci, it sided with Rome. In the great Latin war (340-338 B.C.) it took part against Rome, but was treated leniently by the victorious Romans, who, instead of punishing the inhabitants, made them Roman citizens. After the time of Cicero it was important only as the chief seat of the worship of Juno Sospita; there was at Lanuvium a very rich temple of that goddess. It was the birthplace of Antoninus Pius and of Milo, the C. Julius; and near it was born the The small town of Civitá Lavinia occupies part of the site of the old Lanuvium, of which a few walls and pavements remain.

LAN'ZA, GAETANO (1848—). An American mathematician, engineer, and educator, born in Boston, Mass. He was educated at the University of Virginia, was an instructor there for two years and from 1872 to 1911 was connected with Massachusetts Institute of Technology—after 1875 as professor of theoretical and applied mechanics and after 1883 as head of the department of mechanical engineering. In 1911 he became professor emeritus. At various times he was active as a consulting engineer. In 1906-11 he served as president of the Mathematical and Physical Club, and he held membership in a large number of American and foreign mathematical and engineering societies. Besides numerous papers and pamphlets, his writings include *Applied Mechanics* (1885; 9th ed., 1905) and *Dynamics of Machinery* (1911).

LANZA, lán'tsà, GIOVANNI (1815-82). An Italian statesman, born at Vignale in Piedmont.



LAOCOÖN
FROM THE GROUP IN THE VATICAN MUSEUM, ROME

He studied medicine at Turin and practiced his profession at Vignale for several years, early joined the Agrarian Society, founded the *Opinione*, and in 1848 was elected to the Sardinian Parliament, where, as a prominent member of the Left Centre, he was chiefly interested in finance and other economic subjects. He was Minister of Education under Cavour (1855-58) and Minister of Finance up to the resignation of Cavour after Villafranca, in July, 1859. After serving as President of the House of Deputies (1860), he acted for a year (1864-65) as Minister of the Interior. He returned to the legislative chamber and served there (in 1867 and 1868 again as President) until 1869, when, having defeated the ministry of Menabrea, he became head of the cabinet and Minister of the Interior. Under his administration, which carried through important educational reforms, the seat of the government was transferred to Rome. He resigned in 1873, owing to a coalition of the Left and the Right against his financial policy. He was a deputy up to the time of his death. Consult Tavallini, *Lanza ed i suoi tempi* (Turin, 1887).

LANZAROTE, lán'tha-rō'tá. One of the Canary Islands (q.v.), the most easterly of the group (Map Spain, G 4). Area, 325 square miles. Pop., 1900, 17,550, 1910, 19,261. It is very irregular in outline and of volcanic origin; its surface is rough and mountainous. It has some agricultural products. The island has no good harbor. Its capital, Arrecife, had a population of 3764 in 1910.

LANZI, lán'tsè, LUIGI (1732-1810). A celebrated Italian antiquary and art critic, born at Monte dell' Olmo, near Macerata. He entered the Order of the Jesuits and resided at Rome and afterward at Florence, where he became president of the Accademia della Crusca. In 1782 he published at Florence his *Descrizione della galleria di Firenze*. His great works are his *Saggio di lingua etrusca* (1789), in which he maintains the influence of Greece upon Etruscan civilization, and his *Storia pittorica d'Italia*, etc. (1792 and 1809). This latter work was translated into English by Thomas Roscoe (1847). He is the author also of several poems, works on Etruscan vases, sculptures, etc. His posthumous works were published in two volumes at Florence in 1817. Consult. Boni, *Elogio dell' abate L. Lanzi* (Pisa, 1816); Giulio Natali, "Nel primo centenario dalla morte di Luigi Lanzi," in *Real deputazione di storia patria per le provincie delle Marche, atti e memorie*, vol. vi (N. S., Ancona, 1911).

LAOAG, lá-wág'. The capital of the Province of Ilocos Norte (q.v.), Philippines (Map: Philippine Islands, C 1). It is situated in a fertile plain in the northwestern part of Luzon, stretching for several miles along the right bank of the Laoag or Pagsán River, 4 miles from the sea. Its houses are for the most part well built, especially the town hall and the church; it has a telegraph station and is the projected terminus of a railroad from Manila. It exports rice, corn, sugar, and tobacco. Pop., 1903, 34,454. The Pueblo of San Nicolás (pop., 10,880) was added in 1903 after the census.

LAOCIUS, lá-ō'shí-ús. See LAOTSE.

LAOCOÖN, lá-ōk'ō-on (Lat., from Gk. Λαοκόων, *Laokoön*). According to classic legend, a brother of Anchises (q.v.), priest of Apollo in Troy, who in vain warned his countrymen against receiving within their walls the wooden

horse. According to the version given by Vergil in the *Æneid* (11, 199 ff.), two serpents then came swimming from Tenedos, attacked the two sons of Laocoön, and, when the father came to their help, destroyed him also. There are many traces of earlier versions: in one only the sons are killed, and the serpents are sent by Apollo as a warning to Æneas; in another destruction falls on the father and one son. The story is not noticed in the Homeric poems, but was told in the later Greek epic and was the subject of a tragedy by Sophocles. It acquires a peculiar interest from being the subject of one of the best-known works of ancient sculpture still in existence—a group discovered in 1506 at Rome, in the Sette Sale, on the side of the Esquiline Hill, and purchased by Pope Julius II for the Vatican. The whole treatment of the subject, the anatomical accuracy of the figures, and the representation both of bodily pain and of passion, have secured for the group a higher place than it properly merits. According to Pliny, a Laocoön was the work of the Rhodian artists Agesander, Polydorus, and Athenodorus. Until lately archæologists differed about the date of the Extant group. Its date, however, has been established by the discovery in Rhodes of a statue of a priest of Athena whose date is 42 B.C. This statue bears the signature of Athenodorus, the son of A. . . . re is little reason to doubt that . . . who later on (22-21 B.C.) appears as priest together with his brother Agesander, was with the latter one of the sculptors of the Extant Laocoön group. Thus the statue antedates Vergil's narrative in the *Æneid*. In spite of its wonderful execution this group is not an example of the best Greek work, but belongs to a period of low artistic ideals.

Bibliography. Lessing, *Laokoon oder über die Grenzen der Malerei und Poesie*, especially in the second edition by Blümner (Berlin, 1880), where the earlier literature is cited; also Robert, *Bild und Lied* (ib., 1881); Kekule, *Zur Deutung und Zeitbestimmung des Laokoon* (Stuttgart, 1883); Fürster, in the *Verhandlungen der vorzüglichsten Philologenversammlung zu Götting* (Leipzig, 1890); J. E. Sandys, *History of Classical Scholarship*, vol. iii (Cambridge, 1908); E. A. Gardner, *Handbook of Greek Sculpture* (London, 1911); H. H. Powers, *Message of Greek Art* (New York, 1913).

LAOD'AMAS (Lat., from Gk. Λαοδάμας). 1. The son of the Phæacian King Alcinoüs and Arete. 2. King of Thebes and son of Eteocles. The expedition of the Epigoni against Thebes took place in his reign, and he was slain by Alcæon, after having killed their leader, Ægialeüs. See EPIGONI; ETEOCLES AND POLYNICES; SEVEN AGAINST THEBES.

LA'ODAMI'A (Lat., from Gk. Λαοδάμεια, *Laodameia*). 1. The daughter of Acastus and Astydamia. Learning of the death of her husband, Protesilaüs (q.v.), in the Trojan War, she consoled herself by keeping constantly with her a wooden image of the hero; and when her father caused it to be burned in order to turn her mind from her sorrow, she threw herself into the fire. According to another tradition, Protesilaüs was restored to life for three hours, and Laodamia accompanied him on his return to the lower world. The story is used by Wordsworth in his poem *Laodamia*. 2. The daughter of Bellerophon and mother by Zeus of Sarpedon.

LAODICE, lá-ōd'ī-sē (Lat., from Gk. Λαοδίκη,

Laodikea). 1. A nymph, and the mother of Niobe (q.v.) by Phoroneus. 2. The daughter of Priam and Hecuba and wife of Helicaon. 3. In Homer, the daughter of Agamemnon and Clytemnestra, called Electra by the tragic poets. See also LAODICEA.

LAODICEA, lă'ôd-i-sē'a (Lat., from Gk. *Λαοδικεα*, *Laodikeia*). The name of several Greek cities in the East, built by the Seleucidæ (q.v.), who ruled the Kingdom of Syria after the death of Alexander the Great. Five of these were named after Laodice, wife of Seleucus Nicator, and one after the wife of Antiochus Theos. Three are of some importance—two in Asia Minor, and one in Syria. Most important was *Laodicea ad Lycum*, situated in southwestern Asia Minor, commonly reckoned in Phrygia, though sometimes included in Caria or Lydia. It was situated about 11 miles west of Colossæ, on the great trade route from the Euphrates and the interior through Apamea (q.v.), at the junction of several important roads from the coast and interior, and was at one time called Diospolis, but was renamed by Antiochus Theos (260 B.C.), who reestablished and fortified the town as a centre of Greek influence. By reason of its favorable position for trade and the fertility of the adjacent country, it soon became a large and wealthy city, and, in spite of the disasters of the Mithridatic wars, it was a chief seat of Roman influence under the Empire. It seems to have early become a Christian centre, as it is mentioned in the Epistle to the Colossians (ii. 1) and is one of the seven churches addressed in the Apocalypse.

The town was a banking centre and famous for its manufacture of cloth from the glossy black wool of the district, but it likewise had obtained great renown for its school of medicine connected with the temple of Men Karu, who was identified with the Greek Asclepius. It changed hands more than once in the wars between the Byzantine Empire and the Turks and gradually fell into decay. The site, known as Eski-hissar, near Gondschei, is deserted, but contains a number of fine ruins of the Roman period, including a well-preserved stadium and two theatres. The town was supplied with water by an aqueduct of which many arches remain. Consult: Sir W. M. Ramsay, *Cities and Bishoprics of Phrygia*, vol. 1 (Oxford, 1895); id., *Letters to the Seven Churches* (New York, 1905); Baedeker, *Konstantinopel, Balkanstaaten, Kleinasien, Archipel, Cypern* (2d ed., Leipzig, 1914).

Another town, founded by Seleucus Nicator, in the territory of Lycaonia, was situated on the highroad from Ephesus to the East. The town was known as *Laodicea Combusta* (Gk. *Λαοδικεα κατακεκαυμένη*), probably because of an early destruction by fire, though Strabo says the name was due to the volcanic rocks in the neighborhood; modern travelers deny that there is any such formation. The modern Sorgan Ladik probably occupies the site of this city, and in the neighborhood are extensive architectural remains.

The third city, also founded by Seleucus, was *Laodicea ad Mare*, in northern Syria, now Latakia (q.v.).

LAODICEA, COUNCIL OF. A council held during the fourth century, but whether towards the beginning, middle, or end has been earnestly debated without being determined. It consisted of 32 bishops from different provinces of Asia and embodied its decisions in 60 canons, relating

to matters of ritual, church order, dignity, precedence, discipline, morals, faith, and heresy. The most important of them is the last, giving a list of the books of Scripture received at that time as canonical, which does not contain the Apocrypha or Revelation. They may be found in Hardouin, *Conciliorum Collectio*, vol. 1 (Paris, 1715). Consult Hefele, *Konziliengeschichte*, vol. ii (Freiburg, 1855-74).

LAODICEANS, lă'ôd-i-sē'an-z, EPISTLE TO THE. See APOCRYPHA; EPHESIANS, EPISTLE TO THE.

LAOKOON, lă-ôk'ô-on. A treatise on the characteristics of poetry and sculpture by Lessing (1766), based upon the Laocoön group in the Vatican. For a description of the treatise, see LESSING, GOTTHOLD EPHRAIM.

LAOM'EDON (Lat., from Gk. *Λαομέδων*). Son and successor of Ilus, who founded the city of Ilium (Troy, q.v.). He is said to have been served by Poseidon and Apollo by command of Zeus—the former erecting the walls of the new city, while Apollo acted as herdsman. Laomedon having refused to pay them according to agreement, Apollo sent a plague and Poseidon a sea monster, which killed many Trojans, until an oracle commanded as an atonement the offering of one of Laomedon's daughters. The lot fell on Hesione, and she was chained to a rock to await the return of the monster. Hercules appeared at this point, on his return from the country of the Amazons (q.v.), and, having been promised the immortal horses given by Zeus to Tros if he should slay the monster, killed the creature, and freed Hesione. When his reward was refused, Hercules gathered a force, killed Laomedon, captured the city, and carried off Hesione as booty, after placing Priam, who had alone protested against his father's acts, upon the throne.

LAON, lăn. A fortress and the capital of the Department of Aisne, France, situated on an isolated hill, 87 miles northeast of Paris (Map: France, N., J 3). It has numerous ancient buildings and three gates belonging to its thirteenth-century fortifications, which have been razed. The cathedral of Notre Dame is one of the finest twelfth-century Gothic edifices in France. It was finished in 1225 and is surmounted by numerous towers, some of them unfinished, and the two flanking the façade being adorned with huge oxen, said to commemorate the animals used in the transportation of the stone for the building. Another noteworthy church is that of St. Martin (twelfth century) in Transition style. The Palais de Justice occupies the thirteenth-century episcopal palace, and the prefecture is housed in the former abbey of St. Jean (twelfth century). The educational institutions comprise a lycée, a communal college, a normal school, a school of agriculture, a fine library of 15,000 volumes and rich in manuscripts and autographs, a museum of local antiquities, and a theatre. Laon manufactures linen and other textiles, sugar and metal products. It is noted for its fruits and vegetables. Pop., 1901, 15,434; 1911, 10,323. Laon is first mentioned as Laudunum in the fifth century. It was fortified by the Romans and eventually attained great importance in the kingdom of the Franks; in the tenth century it was the residence of the Carolingian kings. During the twelfth and thirteenth centuries the place suffered considerably in the struggles with its bishops. The bishopric of Laon, founded at

the beginning of the sixth century, was abolished in 1789. In modern times Laos is associated with the defeat of the French under Napoleon by the Germans under Blücher in 1814. In 1870 Laos capitulated to the Germans, but the entrance of the conquering army into the town was marked by the blowing up of the powder magazine by a French private, with the result that over 500 people were killed and wounded and the town was considerably damaged.

LAOS, lă'ôs. A region in the northern part of Siam, comprising the Middle Mekong District, from about lat. 13° to 23° N. (Map. Burma, D, E, 3). Its boundaries are not well defined, and its area is estimated at about 116,000 square miles. Its political status has been determined by the agreements of 1893, 1896, and 1904. By the first, France obtained possession of the portion east of the Mekong, which now forms a part of French Indo-China, by the second agreement between France and England, which was more clearly defined in the Convention of 1904, the portion west of the Mekong was divided into two parts, of which the eastern, belonging to the basin of the Mekong, was declared within the French sphere of influence, and the western part was declared within the British sphere, finally, by the Treaty of 1904 between Siam and France, the former country agreed to abandon all claim to the Luang Prabang territory on the west side of the Mekong. By a subsequent treaty in 1907, part of the Luang Prabang territory was again passed to Siam. The country is covered largely with forests of valuable woods, but only teak and rattan are exploited. Laos is believed to contain considerable mineral wealth. There are many gum and rubber trees. The climate is healthful during the dry season, from the middle of October to the end of April. The natives raise rice, corn, tobacco, cotton, indigo, sugar cane, and tea. They also produce mats and other objects of Sparta grass. There are a French Resident and a number of French commissioners in the eastern part. The population is estimated at 2,000,000, chiefly Laos. Chief town, Luang Prabang.

LAOS, lă'ôz, or **LAOTIANS**. One of the chief groups of the Thai stock, which includes the Shans, Thos-Muong, Siamese, Burmese, etc. They inhabit the northern parts of Farther India, from Tongking to Assam, but the Laos country belongs chiefly to Siam and French Indo-China, only a few tribes still preserving their independence. The physical characters of the Laotians are medium (sometimes quite low) stature, except in the most favorable districts; somewhat brachycephalic head form; hair black, stiff, and rarely curly, beard scanty, skin among the general population tawny, but among the higher classes lighter and often almost white. The upland Laotians are fairer-skinned than the people of the lowlands. Certain customs and practices, such as the North Laotian tattooing with needles, bodily ornamentation, etc., have been regarded as indicative of Malayan affinities. The character of the primitive Laotians is generally considered as of a higher order than that of many of their more civilized neighbors. They are, at their best, of a pleasanter disposition, franker, and more accessible than many of the other peoples of Farther India and combine the qualities of good subjects with a never-extinct longing for independence. In occupation the Laotians are agriculturists, cultivating rice and the mulberry tree, and raising silkworms; in

part shepherds and hunters. Some of the settled and more civilized Laotians make the wilder tribes of their environment grow rice and other foods for them. Others are expert cutters of teak and other timber. Being on the route of travel between China and Farther India of the south, they have had something to do with the development of trade and commerce in that region, although they are not credited with any keen commercial sense. Some of the Laotians are celebrated for their metal work. Excepting music, the fine arts seem not to be largely cultivated, but there is among them a considerable indigenous as well as borrowed folk literature.

Polygamy is rare with the masses of the people, and the position of woman is not at all low with some of the tribes; for, if she does work hard, she is the head of the household. Those who are not still "heathen" have accepted Buddhism in some form or other, but among the lower and ignorant classes ancestor worship, fetishism, etc., survive. From their neighbors, the Khmers, they have borrowed some superstitious beliefs, as the werewolf and the like. Some of the Laotians have a special form of writing, probably of Indian origin. With the Shans the Laotians shared in the earlier Thai civilizations of this part of Farther India, some of which were in their prime in the thirteenth, fourteenth, and fifteenth centuries. A few of the Laos "states" still exist in a semi-independent condition.

Bibliography Bock, *Temples and Elephants* (London, 1885); Colquhoun, *Among the Shans* (ib., 1885); Taupin, "Voyage d'exploration et d'études au Laos," in the *Bulletin de la Société Normande de Géographie* for 1890; Aymonier, *Voyage dans le Laos* (Paris, 1897); Lefèvre, *Un voyage au Laos* (ib., 1898); Lucien de Reinach, *Le Laos* (ib., 1911).

LAO-TSE, **LAU-TZĚ**, or **LAO-TSU**, lou'tsu' (Chin., venerable philosopher). An ancient Chinese sage, the reputed founder of the philosophy known as Taoism (qv). Little is known regarding him that is absolutely trustworthy. That he existed is beyond doubt, for Sze-ma Ts'ien, the Chinese historian, who wrote about 100 B.C., mentions him and gives the longest sketch of his life that we have. His real name was Li Urh, a name of no special significance, as Li is the commonest of surnames in China. It means 'plum tree' and has served the legend mongers as a peg on which to hang the story that he was born under a plum tree, and that he immediately pointed to the tree, saying, "From this tree I take my name." Another legend is that he was white-haired when he was born, having been carried for 70 years in his mother's womb, and from this circumstance he is known as Lao-tse, which may mean 'old boy' as well as 'venerable philosopher.' His posthumous title was Peh Yang, or Earl Yang, and his appellation Tan, which means 'flat-eared.' He was born, according to Sze-ma, in the village of Kihuh-jin (misdirected benevolence), in the parish of Li (cruelty), the prefecture of Ku (bitterness), and the principality of Ts'u (distress), supposed to have been situated in what is now the Province of Honan, or perhaps the neighboring Province of Anhui. This was in 604 B.C. At some time in his life he became librarian and archivist of the Chou dynasty, whose capital was at Loyang in Honan. He had a considerable influence on Confucius, who visited him about 517 B.C., and learned from him a lesson in humility.

In his old age Lao-tse retired and betook himself to the frontier, whether of his own state or of the Empire is uncertain. There he lingered for a time, instructing Yin-hi, the warden, and at his request wrote a book of about 5000 words, in which he discussed the concepts of Tao and Teh, for which see the article TAOISM. When or where he died is not known. Legend states that when last seen he was riding away into the wilderness of Tibet, mounted on a black ox. Some ill-advised attempts have been made to Latinize his name into *Laocius*. Consult: Waters, *Lao-tzu: A Study in Chinese Philosophy* (London, 1879); Carus, *Lao-tze's Tao-teh-king* (Chicago, 1898); Hirth, *The Ancient History of China* (New York, 1908). See CHINA.

LAPAROTOMY (from Gk. *λαπάρα*, *lapara*, flank, loins + *τομή*, *tomē*, a cutting, from *τέμνω*, *temnō*, to cut) A surgical term, used to designate making an incision through the abdominal walls and peritoneum for the purpose of exploring or operating upon the abdominal or pelvic viscera. The term is being replaced by *celiotomy* (from Gk. *κοιλία*, *koilia*, hollow, abdomen + *τομή*, *tomē*, a cutting), which is more exact. Consult Bryant, *Operative Surgery* (4th ed., 2 vols., New York, 1905), and Ashhurst, *Surgery* (Philadelphia, 1914).

LAPAUZE, JEANNE, née LOISEAU See LE SUEUR, DANIEL.

LA PAZ, la päth, *So Amer. pron.* pás. A city in the Province of Entre Ríos, Argentina, situated on the left bank of the Paraná, 87 miles northeast of the city of Paraná (Map: Argentina, H 4). It is a regular stopping place for steamers on the river and an important port of transit between Buenos Aires and Asunción. Its chief exports are hides and preserved beef. It was founded in 1836. Pop. (est.), 9000.

LA PAZ. The most populous department of Bolivia, occupying the northwest portion of the Republic (Map: Bolivia, D 7). It is bounded by Brazil on the north, the Bolivian departments of Cochabamba and Beni on the east, by Oruro on the south, and Peru on the west. Its area is estimated at 72,970 square miles, and it is formed of 13 provinces. Geographically it is divided into two parts differing radically from each other in surface formation. The northern and larger part, which was formerly included in the Department of Beni, is an extensive plain, thickly wooded and well watered by the numerous tributaries of the Beni and the Purus. This region has a hot and unhealthful climate and is inhabited mostly by Indians. The southern portion belongs mostly to the region of the Cordillera Real and is exceedingly mountainous, containing some of the highest peaks of the continent, such as Illimani and Illampu. It is drained by the upper portion of the Beni and takes in a large part of Lake Titicaca with its outlet, the Desaguadero. The generally mountainous surface is diversified by numerous elevated valleys, covered with luxuriant vegetation and having a delightful climate. The main agricultural products are corn, wheat, potatoes, cocoa, coffee, sugar cane, rice, cacao, bananas, oranges, etc. Cattle raising is carried on extensively, and the natural conditions of the region are very favorable for the development of that industry. Mining industries are also important. Gold, copper, silver, and tin are the chief mineral products. Pop., 1900, 445,616; 1914 (est.), 500,000. Capital, La Paz (q.v.).

LA PAZ. A city and the capital of the De-

partment of La Paz, Bolivia, and also the de facto capital of the Republic. It is situated on the Chuquiapu River, 30 miles southeast of Lake Titicaca, 12,470 feet above sea level, and has a cool and healthful climate (Map: Bolivia, D 7). It has paved streets, some of which are narrow and steep, and there are 20 bridges crossing the river. It has several squares, on one of which, the Plaza Murillo, stand the fine cathedral (as yet incomplete), the Legislative Palace, and the Government Palace. There are several handsome drives and promenades, one of which, the Alameda, is very broad and entered by three iron gates. The city has a tramway and is lighted by electricity. It has a university, with faculties of law, medicine, and theology, a national college and seminary, a museum, a public library, two hospitals, and various scientific and philanthropic societies. The industries of the city are unimportant, but it has an active trade in the agricultural and mining products of the surrounding district as well as in imported articles brought from the Pacific ports. Pop., 1909, 78,856. La Paz was founded in 1548 by Alonso de Mendoza. In its early history it suffered several times from Indian uprisings, being once besieged for four months by 100,000 Indians. It was the first Peruvian city to revolt against Spain.

LA PAZ, la pás. A port on the east shore of Lower California, Mexico, situated on the Bay of La Paz (Map: Mexico, D 5). It is the seat of the most valuable pearl fishery on the Pacific coast and has considerable trade in the products of the fertile district around it and of the mines of Triunfo. The town has a good harbor and is the seat of the United States Consul. Pop., 1900, 5046; 1910, 5536.

LAPEER, lá-pēr' A city and the county seat of Lapeer Co., Mich., 60 miles north of Detroit, on Flint River, and on the Michigan Central and the Grand Trunk railroads (Map: Michigan, F 5). It is the centre of a fertile agricultural region and an important market for farm produce and poultry, it has flouring and planing mills, foundries, stove works, a tannery, and machine works. The Michigan Home and Training School, for the feeble-minded, is here. Settled in 1832, Lapeer was first incorporated in 1875, the charter of that year still being in operation and providing for a mayor, annually elected, and a unicameral council. The city owns and operates the water works. Pop., 1900, 3297; 1910, 3946.

LA PELTRIE, la pèl'trè', MARIE MADELEINE DE, née CHAUVIGNY (1603-71). A French educator and religious, born at Alençon. Though wishing to enter a convent, she was forced by her father to marry, but was left a childless widow at the age of 22. On reading La Jeune's *Relation* (1635), she determined to use her entire fortune in the education of Indian girls. She went to Quebec in 1639 with three nuns and founded the Ursuline Convent there, maintaining a school for both white and Indian girls. In 1642 she joined the Montreal colony, remaining there until 1646, when she returned to Quebec. She is said to have entered as novice in this year. She died in the convent in 1671. Particular reference is made to her in R. G. Thwaites (ed.), *The Jesuit Relations*, vols. xi, xvi (Cleveland, 1896-1901).

LAPÉROUSE, là-pá'rōōz', JEAN-FRANÇOIS DE GALAUP, COUNT DE (1741-188). A French navi-

gator, born near Albia, in the Department of Tarn. He entered the navy in 1756, fought against the English in the Seven Years' War, and was made a captain in 1780. In 1782 he was sent to destroy the British forts in Hudson Bay. Three years later he was chosen to command an expedition of discovery, sent out by the French government for the purpose of completing the explorations of Cook and Clarke in the Japan seas and southeast of Australia and, incidentally, of attempting the Northwest Passage. Lapérouse sailed in August, 1785, with two frigates, the *Boussole* and the *Astrolabe*, taking with him specialists in botany, astronomy, geology, and geography. The expedition was carefully equipped and did good work. The ships crossed the Atlantic to Brazil, rounded Cape Horn, and skirted the coast of the Americas to lat 60° N., Mount St. Elias being sighted. On Nov. 5, 1786, Necker Island, a small island some hundred leagues northwest of the Hawaiian group, was discovered. The explorers sighted the Marian Islands, touched at the Philippines, and by May, 1787, would seem to have been in the neighborhood of Korea. These waters were for the Western world absolutely unknown, and Lapérouse devoted some six or seven months to the exploration of the vicinity. In August he discovered the strait between the islands of Sakhalin and Yezo, which now bears his name. From the Bay of Avatscha in Kamchatka, Lesseps, the interpreter of the expedition, was dispatched in September to France by the overland route across Siberia, carrying with him the records and maps of the expedition. Then, going south Lapérouse landed on one of the Navigator Islands, where 21 of the expedition, including the captain of the *Astrolabe*, were massacred by the natives. Lapérouse touched Tasmania and on Jan. 26, 1788, made Botany Bay. He remained there until February 7, after which there is no trace of the movements of the expedition. The French government offered a reward of 10,000 francs for information and in 1791 sent an expedition in search of Lapérouse, but without success. In 1826 an English captain, Dillon, found some remnants of the wreckage of Lapérouse's ships in the possession of the inhabitants of Vanikoro, one of the New Hebrides. A French expedition sent out in 1828 under Dumont d'Urville ascertained that both ships had been wrecked in a storm off the coast of this island and that all on board had perished, and Dumont d'Urville erected a monument to the memory of Lapérouse on the island. There are three editions of Lapérouse's voyages, prepared from journals sent home by him and published under the title *Voyage autour du monde* in 1797, 1799, and 1831, the last and most exact edited by Lesseps. In April, 1888, the Société de Géographie in Paris commemorated the one hundredth anniversary of Lapérouse's death. Consult *Bulletins de la Société de la Géographie* (Paris, 1888).

LA PEYROUSE, lá pá'rōōz', PHILIPPE PICOT DE (1744-1818). A French naturalist, born near Toulouse, where he was Advocate-General in the Parliament (1768-71). He applied himself to natural history researches, chiefly in the Pyrenees, from 1774 to 1789, when he was recalled to the administration of his native district, became inspector of mines, professor of natural history in the central school of Toulouse, and mayor of the city (1800). In 1811 he was made perpetual secretary of the Toulouse Academy of

Sciences, and during the Hundred Days he was president of the electoral college of Haute-Garonne, but soon retired to private life and cultivated beautiful species of pines on his property. He published: *Description de plusieurs nouvelles espèces d'orthocératites et d'ostracites* (1781); *Flore des Pyrénées* (1795; 4th ed., 1801); *Monographie des saunifrages* (1801); *Histoire abrégée des plantes des Pyrénées* (1813-18).

LAPHAM, lăp'am, INCREASE ALLEN (1811-75). An American naturalist, born in Palmyra, N. Y. For a time he served as assistant on the survey of the Erie Canal and as engineer in the construction of the Welland and Miami canals. After moving to Milwaukee, Wis., in 1836, he turned his attention to scientific study and investigation, particularly in the branches of botany, meteorology, and geology. From 1873 to 1875 he acted as chief geologist of Wisconsin. He was a member of the Wisconsin Historical Society and of the Wisconsin Academy of Sciences. His best-known publications are: *A Geographical and Topographical Description of Wisconsin* (1844); *Antiquities of Wisconsin* (1855). *Geological Map of Wisconsin* (1855).

LAPIDANUS. See HEYNLIN, JOHANN.

LAPIDARY WORK. (Fr. *lapidaire*, Lat. *lapidarius*, stonecutter, from *lapis*, stone). The art of cutting, grinding, and polishing stones, especially gems (qv). The earliest examples of lapidary work are the engraved cylindrical seals of Babylonia and Assyria and the scarabæoids of Egypt, dating back at least as far as 4500 B.C. At first the cylindrical seals were made of shell, later from diorite, serpentine, chalcedony, quartz, rock crystal, amazon, amethyst, and fossil coral; but no specimens are known of ruby, sapphire, emerald, diamond, or tourmaline. The earliest engraving was done slowly and laboriously by hand with the *sapphire point* only, the *bow drill* being introduced about 3000 B.C. In the bow drill the point is made to revolve rapidly by moving up and down a horizontal crossbar, to each end of which is attached a string wound around the vertical stick in which is set the drill point. Phœnician work shows a mixture of Babylonian and Assyrian designs. Greek work modified Egyptian scarabs by adding Greek and Etruscan symbols and mysterious signs. During the first three or four centuries of the Christian era many pagan gems were recut with Gnostic and other obscure devices. With the Renaissance the art revived, and work equal to that of the greatest Greek and Roman masters was produced. During the sixteenth, seventeenth, and eighteenth centuries many copies were made that can with difficulty be told from the ancient originals. Until the fourteenth century gems were mostly cut *en cabochon* (polished smooth, preserving the original size and color of the stone as far as possible), or like beads with a hole drilled through the centre. Faceting, or finishing with a surface of flat faces geometrically arranged as in cut diamonds, is a modern invention. Modern gem cutting and engraving is done on a lathe carrying a point or disk of soft iron, primed with diamond dust and oil. Opaque and translucent stones such as opals, moonstones, turquoises, and caruncles are still cut *en cabochon*, but transparent gems are almost always faceted, in order to enhance their brilliancy by reflection and refraction of light. Important centres of garnet cutting are the region around Merowitz

in Bohemia and Jaipur in India. The world's centres of agate cutting are the German cities of Walldkirch in Breisgau and Idar and Oberstein in Oldenburg. In Russia lapidary work is especially encouraged by the state, and there are great Imperial establishments at Ekaterinburg and Peterhof, and at Kolyvan in Siberia. Königsburg and Danzig in Germany are centres of amber cutting. China has for centuries been the centre of jade cutting. For diamonds and diamond cutting, see DIAMOND. Consult: L. Pannier, *Les lapidaires français du moyen âge* (Paris, 1882); Leopold Clarendon, *The Gem-Cutter's Craft* (London, 1906); Paul Meyer, "Les plus anciens lapidaires français," in *Romania*, vol. xxxviii (Paris, 1909). See GEMS.

LAPIDE, CORNELIUS À See CORNELIUS À LAPIDE

LA PIEDAD, là pyá-dá'd. A town of the State of Michoacán, Mexico, situated at the north boundary of the state, 62 miles southwest of Guanajuato, and on the left bank of the river Lerma, which is here crossed by a fine bridge (Map: Mexico, H 7). Adjacent to it is an important agricultural district. Pop, 1910, 10,604. In 1871 it received the title of city.

LA PIJARDIÈRE, la pézhár'dyâr', LOUIS DE LA COUR DE (1832-91). A French author and antiquary, born at Nantes and educated at the Ecole des Chartes. He became keeper of the archives of the Ste. Geneviève Library in 1860 and of that of Hérault in 1872. He committed suicide at Montpellier in 1891. He was a special student of Molière. Among his works (some under the name Louis La Cour) are: *Les garçons de café de Paris, par Gaston Vorlac* (1856); *Le parc aux cerfs* (1859); *Rapport sur la découverte d'un autographe de Molière* (1873); *Molière à Pézénas en 1650-51* (1885); *Molière, son séjour à Montpellier en 1654-55* (1887); besides editions of Brantôme, of Bonaventure, Des Périers, of Rabelais, and of a facsimile of the earliest editions of Molière for the Académie des Bibliophiles. He founded the historical review *Chroniques du Languedoc*.

LAPIS LAZULI, or LAZURITE (Neo-Lat., stone of azure, from Lat *lapis*, stone, and ML *lazulus*, *lazurus*, *lazur*, MGK. λαζούριον, *lazourion*, from Ar. *lāzward*, from Pers. *lāzward*, named from *Lāzward* in Persia, where the mineral abounds). A mineral substance, consisting of sodium and aluminium orthosilicate and sodium sulphide. It crystallizes in the isometric system, but is usually found massive, having a beautiful ultramarine or azure-blue color. The mineral was highly esteemed for its medicinal qualities by the ancients, who pulverized it and mixed it with milk, using it as a dressing for boils and ulcerations. Pliny and other Roman writers called it *sapphire*. It was used among the Egyptians in their jewelry, and among the modern nations it has been employed for engraving, for vases, in ornamental and mosaic work, and for altars and shrines. Lapis lazuli occurs in granite and in crystalline limestone, the finest specimens coming from China, Siberia, Persia, and Chile. When powdered, it forms the pigment called *ultramarine*, which, however, has been replaced by an artificial product. See GEMS; ULTRAMARINE

LAPIS OLLARIS, lá'pis ol-lá'ris. See POSTSTONE.

LAPITHÆ (Lat., from Gk. Λαπίθαι, *Lapithai*). In Greek legend, a people who inhabited

the Valley of the Peneus in Thessaly. They derived their name from a mythical ancestor, *Lapithes*, a son of Apollo and the brother of Centaurus, the equally mythical ancestor of the centaurs (q.v.). In legend the Lapithæ appear especially in their conflict with the centaurs. At the marriage of their King Pirithous to Hippodamia, the centaurs, flushed with wine, offered violence to the women, and in the war that followed the centaurs were nearly destroyed. Theseus was said to have helped Pirithous in this struggle, and it consequently assumed a prominent place in Athenian literature and art. It is represented on the friezes of the Theseum at Athens and of the temple of Apollo at Phigaleia, and on the metopes of the Parthenon as well as on vases. The Lapithæ were said to have been crushed by Agimius and the Dorians, assisted by Hercules. There seems reason to believe amid all these legends that the Lapithæ were a folk of some degree of civilization, dwelling in early times in Thessaly. Another King of the Lapithæ was Ixion (q.v.). For the metopes of the Parthenon showing the Centaurs and the Lapithæ, consult E. A. Gardner, *Ancient Athens* (New York, 1902).

LAPLACE, lá'plàs', JOSUÉ DE (1606-55), better known as PLACEUS. A French Reformed clergyman. He was a preacher at Nantes and in 1632 was appointed professor of theology at Saumur. His great work is *De Statu Hominis Lapsi* (1640), in which, like Amyraut (q.v.), he sought to modify the strict Calvinism of his church, but unsuccessfully. His complete works were published at Franeker in 1699 in two volumes.

LAPLACE, PIERRE SIMON, MARQUIS DE (1749-1827). The greatest of the French astronomers. He was born at Beaumont-en-Auge (Calvados). His father, a poor farmer, was unable to give him any educational advantages, but, probably through the generosity of friends, he was able to carry on his studies in the College of Caen and the Military School at Beaumont. In the latter institution he was for a short time a teacher of mathematics, but at the age of 18 he resolved to try his fortune in Paris. Having secured the attention of D'Alembert (q.v.), then in the height of his power, he was, on the latter's recommendation, made professor of mathematics in the Ecole Militaire. Scarcely 20 years of age, his remarkable power of mathematical analysis had already become manifest in his *Recherches sur le calcul intégral* (1766-69). These researches were followed by a series of brilliant memoirs on the theory of probability, which immediately attracted the attention of the scientific world and were the object of special commendation by the Academy of Sciences. As a result of their publication, Laplace was in 1773 made an associate and in 1785 a member of this distinguished body. In 1784 he succeeded Bézout as examiner in the Royal Artillery Corps and in 1794 was made professor of analysis at the Ecole Normale. After the organization of the new Institute he received, through the excellency of his style as shown in his *Système du monde*, a place among "the forty" of the Academy in 1816 and in 1817 was made its president. Laplace was not without political ambition and did not hesitate to resort to flattery to secure place. Napoleon made him Minister of the Interior in 1799, but after six weeks he was compelled to dismiss him with the epigrammatic remark that he carried

the spirit of the infinitesimal into his administration. He was recompensed, however, by a seat in the Senate, of which body he later became the Vice President, and Chancellor in 1803. In 1804 the Emperor also created him Count. His political views conveniently shifting with the change of power, he received his reward from Louis XVIII by being elevated to the peerage with the title of Marquis. He was a member (1795), and a little later became president, of the Bureau of Longitudes, he was president of the commission for the Ecole Polytechnique, a member of the Académie des Sciences to establish the metric system, a Grand Officer of the Legion of Honor, and a member of most of the prominent learned societies of the world. Laplace was indefatigable in his scientific labors and richly deserved the honors which they brought to him. He has justly been called "the Newton of France," "the titanic geometer," and "the greatest mathematician of his age." Self-sufficient in the presence of his fellows, he was humble in his contemplation of the great domain in which he labored, his humility showing itself in the dying words ascribed to him: "What we know is little, what we do not know is immense."

Laplace was celebrated chiefly for his labors in celestial mechanics, especially in relation to the lunar theory, the opposite inequalities of the motions of Jupiter and Saturn, the question of the tides, and the general problem of the stability of the solar system. The conciliation of the results of observations on the motions of Jupiter and Saturn, to the Newtonian theory, had baffled even Euler and Lagrange, and it was the failure of such eminent predecessors that led him as a young man to study the subject. The results of his investigations were given when he was only 23 years old, in a memoir read before the Academy of Sciences, entitled *Sur les solutions particulières des équations différentielles et sur les inégalités séculaires des planètes*. This was followed by a series of brilliant discoveries in the planetary theory. It was in connection with this extended investigation that Laplace discovered in 1786 the dependence of the moon's acceleration upon the secular changes in the eccentricity of the earth's orbit, the keystone in the theory of the stability of the solar system. He also announced the laws of motion of the first three moons of Jupiter, in a form since known as the Laws of Laplace: (1) the sum of the mean movement of the first satellite and of twice the third equals three times that of the second; (2) the sum of the mean longitude of the first satellite and of double that of the second diminished by three times that of the third, equals 180° . Laplace's most celebrated treatise is the *Mécanique céleste* (5 vols., 1799-1825; trans. by Bowditch, 4 vols., Boston, 1829-39). The aim of this work was to give a complete solution of the great mechanical problem of the solar system and to bring the results of observation into harmony with the Newtonian hypothesis. The work will stand as one of the world's greatest contributions to science. At the same time it cannot be denied that it has two serious faults. In the first place, Laplace has justly been blamed for not recognizing the unquestionable discoveries of his predecessors and contemporaries, inferentially making them as his own. The second blemish is the fact that there are many serious omissions in the theory, covered by the frequently recur-

ring expression, "It is easy to see." These two defects in the work were in part removed by the admirable English translation mentioned above. Laplace's *Exposition du système du monde* (1796) was called by Arago the *Mécanique céleste*, disrobed of its analytic attire. The work is more popular and clear and is especially valuable for its condensed but masterly résumé of the history of astronomy to the close of the eighteenth century. In this work appeared the famous nebular hypothesis (see COSMOGONY), an hypothesis so foreign to Laplace's habit of mathematical treatment as to lead him to the apologetic statement that it was suggested "with the mistrust which should inspire everything that is not a result of observation or calculation," but to it he frequently alludes as highly probable. The theory had already been suggested by Kant (1755) and by the Japanese mathematician Shizuki Tadao (1760-1806) in 1793.

In physics Laplace joined with Lavoisier in important experiments (1782-84) on the specific heats of bodies, and contributed in a noteworthy manner to the theories of capillary action, of electricity, and of the equilibrium of a rotating fluid mass. His investigation of the discrepancy between the theoretical and observed velocity of sound led him to take into mathematical account various secondary factors by which the velocity of sound may be influenced. "Laplace's coefficients," also called spherical functions and spherical harmonics, already known to Legendre, were first given in their general form by Laplace, in his *Théorie des attractions des sphéroïdes et de la figure des planètes* (1782). In pure mathematics Laplace made his greatest reputation in the theory of probabilities (q.v.). This doctrine, already created by Pascal and Fermat, and brought to a high degree of perfection by Jakob Bernoulli (q.v.), was investigated by Laplace soon after his arrival at Paris as a young man, and first brought him to the attention of the Academy. He made much use of the subject in his *Mécanique céleste* and was the first to treat the new theory of least squares as a problem of probabilities. His *Théorie analytique des probabilités* appeared in 1812 and his *Essai philosophique sur les probabilités* in 1814. Laplace's complete works have been twice published by the French government respectively under the titles *Œuvres de Laplace* (7 vols., 1843-47), *Les œuvres complètes de Laplace* (13 vols., beginning in 1878). The *Mécanique céleste* is also known in English from an adaptation of a portion of the work under the title *Mechanism of the Heavens*, by Mrs. Somerville (London, 1831), and the first book through a translation by Toplis under the title *Treatise upon Analytical Mechanics* (Nottingham 1814). One of Laplace's works on probabilities was translated into English by Truscott and Emory, under the title *Philosophical Essay on Probabilities* (New York, 1902). Consult: Kaufman, *Laplace* (Paris, 1841); D. F. J. Arago, *Biographies of Scientific Men* (Boston, 1859); August Döring "Kant, Lambert, und die Laplacesche Theorie," in *Preussische Jahrbücher*, vol. lviii (Berlin, 1886); Friedrich Ratzel, "Die Kant-Laplacesche Hypothese und die Geographie," in *Petermann's Mitteilungen*, vol. xlvii (Gotha, 1901).

LAPLAND. A region embracing an area of about 150,000 square miles in northwest Europe. It is not a political entity, but derives its name from the fact that it is the home of

the Lapps, or Laplanders. Its south boundary is not definitely defined, but it may be said to extend south in Norway approximately to lat. 65°, in Sweden to lat. 64°, and in Russia to lat. 66°, including northern Finland and the Kola Peninsula (Map: Europe, F 2). Norwegian Lapland is included under the provinces of Nordland, Tromsø, and Finnmarken; Swedish Lapland occupies the northern part of the Province of Norrland and the whole of Norrbotten (North Bothnia) and is divided into Torneå-, Luleå-, Piteå-, Umeå-, and Asele-Lappland. Scandinavian Lapland is mountainous in Norway, except in the northeastern district of Finnmarken; while in Sweden, though very rough and uneven, the country inclines to flatness. In Finland the country of the Lapps is chiefly flat, with many glacial lakes; about one-half of the Kola Peninsula is tundra or swampy. The rocks of Lapland are chiefly of Plutonic origin, covered with a thin layer of humus. The Swedish and Finnish portions are drained by rivers which empty into the Baltic Sea.

The climate of the whole of Lapland is very severe for nine months in the year, even along the coasts, where some ameliorating influence of the Atlantic is felt, which extends even to the Murman coast of the Kola Peninsula. The snowfall in Sweden is very heavy. A large mileage of snowsheds has been built on the Swedish portion of the railroad. All the most exposed parts of the line are thus protected. The heat of July and August is extreme, but these hot months are separated from the cold seasons by a spring and autumn that are only two or three weeks long. Barley may be grown as far north as 70°, but the general limit of cereals is lat. 66° N. A large part of the country, particularly in the south, is covered with a thin growth of birch, pine, fir, and alder, but trees entirely disappear in the Kola Peninsula. The more elevated tracts, except in Norway, are destitute of vegetation and have no inhabitants; but in the valleys and the lower parts of Lapland there is an undergrowth of lichens and mosses which provide abundant food for the numerous herds of reindeer that are the chief riches of the inhabitants. Some of the southern Laplanders carry on a little agriculture with indifferent success.

Economically this whole region has only one preëminent resource, and that is the beds of iron ore scattered over the southern part of Swedish Lapland. The development of these mines at Gellivare and Kiruna, 44 and 100 miles north of the Arctic circle, resulted in the building of a railroad from the port of Luleå, on the Gulf of Bothnia, to those mining centres, and its extension (completed in 1902) across Lapland to Narvik, at the head of the deep Ofoten Fjord in Norway, on the Atlantic, the railroad being about 280 miles long, of which 230 miles is north of the Arctic circle. This railroad was extended to the Atlantic to give our vessels an ice-free port, Narvik, the year round, as the Gulf of Bothnia is frozen during the winter. The mines of Gellivare yielded 1,076,000 tons of ore in 1901. The district of Norrbotten, wherein Gellivare and Kiruna are located, yielded, in 1913, 4,913,603 tons of ore. These Swedish ores are regarded as among the best steel ores in the world, and there is a large market for them in England and Germany. At Kirunavaara, on the line of the railroad, is a ridge about 700 feet in height, several miles long, of solid magnetic ore,

perhaps the largest and most compact mass of this superior iron ore in the world. The diamond drill has proved the continuity of this metallic rock throughout the ridge, and Swedish engineers estimate that the mass contains 740,000,000 tons of ore, yielding often as high as 70 per cent pure metal.

The Laplanders do not number more than 30,000. They are short in stature (height, 1.529–1.555 meters) and brachycephalic. They have triangular faces, high cheek bones, flat noses, gray, blue, or brown eyes, chestnut or black hair, and they are nimble and lively. Over two-thirds of them live in Norway, about 5000 in Sweden, and 3000 in Russia. Many Norwegians, Swedes, Finns, and Russians have moved into the country, and it is quite certain that the Lapps, who are of Asiatic origin, will ultimately disappear by absorption among the surrounding peoples. They are called Lapps by the Swedes, the name meaning "nomads"; they call themselves Sameh, or Samelats. Virchow believed them to be a branch of the Finns, though they seem to be clearly distinguished from the Finns proper by the form of the crania and their physical features. Schaaflhausen regarded them as the descendants of Mongolian tribes driven northward and migrating west along the Arctic shores. Their language is allied to that of the Finns, and they are not a pure race, as is shown by their family names, which include Swedish, Norwegian, Finnish, and Russian names. The Lapps living on or not far from the seacoast are more numerous than those of the interior and are known as the coast Lapps. Their living is largely derived from fishing and hunting, though the Norwegian Lapps keep many reindeer as well as those of the interior, who are known as the mountain Lapps. The huts of both the fishing and reindeer Lapps are made of a conical framework covered with canvas or some woolen fabric, with a hole at the top to permit the smoke to escape. Those fishing Lapps who have no reindeer lead a more settled life than their kinsmen, who are compelled to be migratory in their habits, because of the frequent need of supplying their reindeer with fresh pasturage. While the fishing Lapps have some small settlements of more or less permanency, each family of the nomadic natives lives by itself, because a herd of reindeer requires a considerable area in which to live. The lichens grow very slowly after having been nibbled, and pasturage once closely cropped is not regarded as usable again for at least 10 years. A family is very poor that does not own at least 25 reindeer, while 50 to 200 head are regarded as a modest competence. The middle class has 300 to 700, the rich over 1000. A few of the wealthier Lapps own as many as 2000. Eight thousand is the largest number one man is known to have owned. The staple food is the flesh, blood, and milk of these animals, the herd also supplying the clothing and implements.

The Lapps are honest and strongly attached to their people and country. The Bible and a few religious books have been translated into their language, and they embrace the forms of religion prescribed by their local government. Thus they are all Lutherans in Scandinavia and Finland and Orthodox Greeks in Russia. Those who have come so far under the influence of missionaries or civilized immigrants as to learn to read and to adopt some of the ways of civi-

lization usually abandon the nomad life and remain in the settlements, blending with the more southern peoples. Towns or villages are unknown among the Lapps proper. The mining town of Gellivare has 10,000 inhabitants, and the ice-free port of Alexandrovsk, on the north shore of the Kola Peninsula, founded by the Russians, is developing into an important town.

Bibliography. Giuseppe Acerbi, *Travels through Sweden, Finland, and Lapland to the North Cape, in the Years 1798 and 1799* (2 vols., London, 1802); Stockfleth, *Dagbog over mine Missionsreiser i Finnmarken* (Christiania, 1860); J. A. Friis, *Finnmarken* (ib., 1871); Von Düben, *Om Lappland och Lapparne* (Stockholm, 1873); Aubel, *Reise nach Lappland* (Leipzig, 1874); G. H. Melin, *Skildringar af den Scandinaviska Nordens Folklig og Natur* (Stockholm, 1876); P. B. Du Chaillu, *Land of the Midnight Sun*, vol. ii (New York, 1882); Edward Rae, *White Sea Peninsula* (London, 1882); J. Quigstad, "Comparative Study of Lappish and Finnish," in *Finnish Academy of Science, Acts*, vol. xii (Helsingfors, 1883); J. A. Friis, *Lappish Dictionary* (Christiania, 1885); Sophus Tromholt, *Under the Rays of the Aurora Borealis*, edited by Carl Siewers (2 vols., London, 1885); O. Nicolaissen, *Fra Nordlands Fortid* (Helsingfors, 1889); T. J. E. Hamy, *Documents sur l'anthropologie* (Paris, 1896); Fries, "Det Första Naturopplysningsfärdens I Sverige," in *Naturhistoriska Föreningsårsskrift* (Christiania, 1898); P. B. Du Chaillu, *Land of the Long Night* (New York, 1899); Bayard Taylor, *Northern Travel* (New York, 1858, new ed., 1902); J. Nippgen, "La langue primitive des Lapons," in *Société d'Anthropologie de Paris, Bulletin et Mémoires*, vol. x (5th series, Paris, 1909); Charles Holme (ed.), *Peasant Art in Sweden, Lapland, and Iceland* (New York, 1910); J. W. H. Fulton, *With Ski in Norway and Lapland* (ib., 1912); Johan Turri, *Lappernes Liv*, in Lappish and Danish translations by Emilie Demant (Copenhagen, 1912); L. E. Walter, *Norse and Lapp* (New York, 1913); H. G. Leach, "Lapland, Sweden's America," in *The American-Scandinavian Review*, vol. ii (ib., 1914).

LAPLAND LONGSPUR. See LONGSPUR.

LA PLATA, la plá'ta. Capital of the Province of Buenos Aires, Argentina, situated 32 miles southeast of the city of Buenos Aires and 5 miles from the port of Ensenada on La Plata Estuary (Map Argentina, H 5). The city is laid out after the plan of Washington. In form it is a perfect square, with an area of 6 square miles, and is surrounded by an avenue 330 feet wide. The streets cross each other at right angles, forming a regular block, which are intersected by broad avenues, and there are 23 open squares or parks of various sizes. The public buildings, constructed principally of brick and stucco, are many and handsome, the most notable being the capitol, the courthouse, the cathedral, the museum, the public library, and the railway station. The museum, especially in the departments of paleontology and anthropology, is one of the most important in South America. The observatory stands in the beautiful Buenos Aires Park, which is entered through a handsome arch. Education is well provided for by a system of public and private schools and by a national university. The city has a good supply of water, pumped from wells into a reservoir 72 feet high. The

streets are lighted by electricity and traversed by surface railroads. An artificial harbor, 1450 yards long, 150 yards wide, and 20 feet deep, formed by means of a dike, is connected by canal with La Plata Estuary at Ensenada. Two drainage canals keep the water from becoming stagnant. The town has increased very rapidly in population, numbering over 30,000 three years after its foundation in 1882, in 1912, 106,382. It was established to provide a capital for the Province of Buenos Aires after the city of that name was ceded to the national government.

LA PLATA, RIO DE. A river of South America. See PLATA, RIO DE LA.

LAPPO GIANNI. See GIANNI.

LA PORTA SEBASTIANI, FRANÇOIS HORACE DE. See SEBASTIANI, F. H. DE LA PORTA.

LA PORTE, la pôrt'. A city and the county seat of La Porte Co., Ind., 59 miles by rail east-southeast of Chicago, on the Lake Shore and Michigan Southern, the Lake Erie and Western, and the Père Marquette railroads (Map. Indiana, D 1). It is a city of great natural beauty, is situated in a lake country, and is a popular summer resort. The surrounding agricultural region is unusually rich. There are extensive industrial establishments, including saw mills, cooperages, braiding mills, foundry and machine shops, wheel works, a sash and door factory, a brewery, and manufactories of furniture, sleeping garments, carriages, woolen goods, radiators, blankets, pianos, bicycles, brooms, flour, etc. Among the noteworthy features of the city are the Ruth C. Sabin Home, the Association House for women and girls, a hospital, the Federal building, and Fox Memorial Park. The government is administered by a mayor and a unicameral council, elected every four years. The water works are owned and operated by the city. Pop., 1900, 7113, 1910, 10,525, 1914 (U. S. est.), 12,533. Settled in 1830, La Porte was incorporated as a town in 1832 and in 1852 was chartered as a city. Consult Packard's and Daniel's *History of La Porte County* (La Porte, 1876).

LA PORTE DU THEIL, la pôrt du tá'y', FRANÇOIS JEAN GABRIEL (1742-1815). A French Hellenist, born in Paris. He left the army in 1763 to devote himself to the study of Greek. In 1779 he went to Italy and by the help of Cardinal de Bernis received permission to examine the archives of the Vatican and made important discoveries there, especially in mediæval history. He took back to Paris 18,000 documents, many of which were afterward printed at the expense of the government before the Revolution. His works include: *Hymnes de Callimaque, avec une version française et des notes* (1775), *Les amours de Léander et de Héro, par Musée, traduits du grec en français* (1784), *Théâtre d'Eschyle, traduit du grec en français* (1794).

LAPPARENT, lá'pá'rân', ALBERT AUGUSTE COCHON DE (1839-1908). A French engineer and geologist, born at Bourges. He was educated at the Polytechnique (1858-60) and at the Ecole des Mines; for some time was connected with the great geological survey and map of France, and in 1875 was chosen professor of geology and mineralogy at the Catholic Institute of Paris. He was elected president of the French Geological Society in 1880, was made a member of the Académie des Sciences in 1897, and also appointed to a chair of mineralogy, geology, and physical geography in the Ecole Libre des

Hautes-Etudes. With Potier he undertook the geological survey for the projected Channel tunnel. His publications include: *Traité de géologie* (5th ed., 3 vols., 1906); *Cours de minéralogie* (2d ed., 1889); *Les tremblements de terre* (1887); *La géologie en chemin de fer* (1888); *Le siècle du fer* (1890); *Science et apologetique* (1905; 7th ed., 1908); *Leçons de géographie physique* (3d ed., 1907); *La philosophie minérale* (5th printing, 1910).

LAPPENBERG, lăp'pən-bĕrk, JOHANN MARTIN (1794-1865). A German historian, born in Hamburg. He studied medicine at Edinburgh, but afterward devoted himself to historical and political studies. He resided for some time in London and afterward studied law and history at Berlin and Göttingen. He became the representative of his native city at the Prussian court in 1820 and in 1823 was appointed archivist to the Hamburg Senate, an appointment which led to his discovery of many valuable historic records which were supposed to have been lost. He died Nov. 28, 1865. His principal work is the *Geschichte von England* (1834-37), the first volume of which was translated by Benjamin Thorpe as *A History of England under the Anglo-Saxons* (1845), and the second as *A History of England under the Norman Kings* (1857). He wrote also a continuation of Sartorius, *Urkundliche Geschichte der deutschen Hanse* (1830), *Ueber den ehemaligen Umfang und die Geschichte Helgolands* (1831); *Urkundliche Geschichte des hansischen Stahlhofs zu London* (1851); *Zeitschrift des Vereins für Hamburger Geschichte* (1841-51), *Hamburger Rechtsaltertümer* (1845). He was a collaborator on the *Monumenta Germaniae Historica* and also edited many specimens of early German literature. Consult E. H. Mayer, *Johann Martin Lappenberg, eine biographische Schilderung* (Hamburg, 1867).

LAPPS. See LAPLAND.

LAPRADE, lă'prăd', VICTOR DE (1812-83). A French poet and essayist. He was born at Montbrison and studied law at Lyons; but literature claimed him, and after travels in Italy (1845), he was appointed professor of French literature at Lyons (1847). From this position he was removed in 1861 because of the satiric poem "Les muses d'état," published in the *Correspondant*, in which he replied to Augier's ironical *Effrontés*. His patriotic poems written in 1870 procured him an election as deputy in 1871. His poetry, largely symbolic, grave, and dignified, includes *Les parfums de la Madeleine* (1839); *La colère de Jésus* (1840); *Psyché* (1842), in which, with the Greek myth, the Christian doctrine of expiation is treated symbolically, *Odes et poèmes* (1844); *Idylles héroïques* (1850), which won him a place in the Academy after De Musset's death; the Hellenic tragedy *Harmodius* (1870), *Le livre d'un père* (1876); *Le livre des adieux* (1878). Among his prose writings mention should be made of *Questions d'art et de morale* (1861); and the attacks on modern education, *L'Education homicide* (1867) and *L'Education libérale* (1873). Consult Biré, *Victor de Laprade, sa vie et ses œuvres* (1886).

LAPRADELLE, lă'pră'dĕl', GEOFFRE DE (1871-). A French juriconsult. He was born in Paris and taught in the law faculties of the universities of Grenoble and Paris and published numerous works on international questions, such as disarmament, rights over terri-

torial waters, and the international aspects of the Monroe Doctrine. He became a member of numerous commissions at the ministries of Justice, Foreign Affairs, and Public Works, and he edited or contributed to many reviews on international law. In 1914 he was French exchange professor at Columbia University, which gave him the degree of LL.D. His writings include: *Théories et pratiques des fondations* (1894); *La mer territoriale* (1898); *La conférence de la Paix* and *La question du désarmement* (1899); *La question du Maroc* (1904); *La guerre maritime et le droit des gens* (1908). In 1905 he began publishing, with Professor Politis, *Recueils des arbitrages internationaux*.

LAPRAIRIE, lă-pră'rĕ. A town and the capital of Laprairie Co., Quebec, Canada, on the south shore of the St. Lawrence River, near Lachine Rapids, and on the Grand Trunk Railway (Map: Quebec, E 5). There is a ferry to Montreal, 6 miles distant. The industrial establishments include saw and carding mills, brickyards, a tannery, an agricultural-implement factory, butter factories, a foundry, and a tomato-canning factory. Laprairie is a summer resort. It was the starting point in 1832 of the first railway in British North America. Pop., 1901, 1451; 1911, 2388.

LAPSAKI, lăp'să-kĕ. See LAMPSCUS.

LAPSE (from Lat. *lapsus*, a falling, slipping, from *labi*, to fall, to slip). In the law of wills, the failure of a legacy or devise to take effect, by reason of the death of the beneficiary before that of the testator, or because it becomes inoperative, subsequent to the execution of the will, for some cause or condition contained in the terms of the will. The term therefore applies only where the legacy or devise is good and capable of taking effect at the time it is made, and becomes inoperative thereafter, and is to be distinguished from the term "void" when applied to a legacy or devise which is not a testamentary act because the beneficiary named is dead at the time of the execution of the will, or by reason of being in contravention of some rule of law. Thus, where A makes a devise to B, who is alive at the time, but who dies before A, the devise is said to lapse, whereas, if B is dead at the time, the devise is void, as it was never capable of taking effect. A bequest to a society of anarchists, to be applied for the purpose of destroying the government, would be void as being in contravention of law. This distinction is important under the common-law rules in regard to the interpretation of wills, under which a devise in a will has reference to the time when the will is executed, and only such real property will pass under a residuary devise as remains undisposed of at that time. Therefore, if a devise is valid at the time when made, but subsequently lapses, a residuary devisee could not claim the property attempted to be disposed of thereby, as it was not a part of the residuum at the time the will was made. However, if a devise is void from the beginning for any reason, the property is never disposed of in contemplation of law and therefore continues a part of the residuum to which the residuary devisees are entitled under the will.

As to personal property, even under the common law the will is construed as if executed immediately before the testator's death and as affecting that which is undisposed of at the time. Therefore personal property attempted to be

disposed of by a legacy which subsequently lapses will go to the residuary legatees, if any.

The rule in regard to the interpretation of wills as to devises has been abolished in England and most of the United States, and as a consequence many States hold that all distinction in this regard as to real and personal property is abolished, and accordingly that lapsed devises fall into the residuum as in case of legacies. However, a considerable number of States still adhere to the common-law rules, notwithstanding the changes effected by their statutes, as above referred to. The statutes of many States tend to prevent the lapse of legacies and devises, by provisions to the effect that in the absence of contrary provisions in the will, the children of a deceased beneficiary shall take the gift intended for the parent. This law does not operate to give such children vested interests, as a devise or bequest is always subject to revocation by the testator. It is quite common for testators to provide against lapses by designating alternative beneficiaries, who will inherit in event of the deaths of those first mentioned. Consult the authorities and references under WILL. See ADEPTION; ADVANCEMENT; DEVISE; LEGACY.

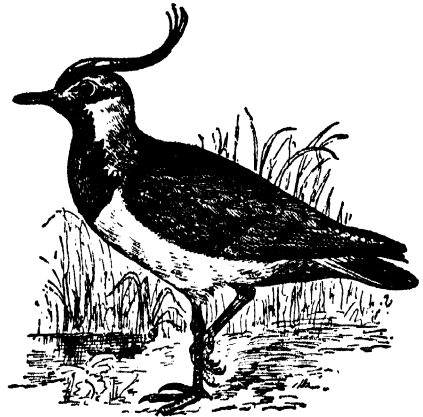
In the English ecclesiastical law, where an officer of the Church of England has a right to designate or "present" a curate or other officer to a particular church and unreasonably neglects to do so, his right is said to lapse, i.e., it is forfeited. See BENEFICE.

LAPSED (Lat. *lapsi*, nom. pl. of p.p. of *labi*, to slip; connected with OChurch Slav. *slabŭ*, OHG. *slaf*, Ger. *schlaff*, slack). The designation applied, in the early centuries of the Christian Church, to those who, overcome by heathen persecution, did not continue faithful to the Christian religion. The lapsed were divided into classes, such as the *sacrificate*, who had actually sacrificed to the heathen gods; the *thurificate*, who had burned incense to them; the *libellatici*, who presented papers testifying that they had done one or the other, whereas they really had not. These papers were obtained either from some heathen neighbor or by bribery. In the persecution under Diocletian (303) a fourth class arose, the *traditores*, consisting of those who at command gave up their sacred books and vessels. Those who saved themselves by flight were reckoned among the lapsed, although their case was not regarded as equally bad with that of those who sacrificed to idols. The lapsed were at first punished by excommunication, and their reception into the Church again was strenuously resisted; but later a milder course was generally adopted with regard to them, though at the cost of schisms in the Church on the part of those who held that the holiness of the Church was compromised by their membership. See AUGUSTINE; CYPRIAN; NOVAIAN; DONATISTS.

LAPUTA, lâ-pŭ'tă. An island described as floating in the air, in Swift's *Gulliver's Travels* (1726). Its movements were guided by a shuttle-shaped loadstone, under the control of the wise men of the island, and it followed the direction in which the loadstone was pointed. The imaginary inhabitants of this remarkable island were grave philosophers devoted to mathematics and music, who wore garments adorned with representations of harps, trumpets, fiddles, flutes, guitars, and other instruments, and with suns, moons, and stars. These philosophers were wont to be so absorbed in their specula-

tions that they neither spoke nor attended to what was said by others, until gently reminded by servants, who were supplied with blown bladders, fastened like flails to the end of a sharp stick. With the bladders it was the duty of the servants to strike gently the mouths or ears of their masters in order to arouse them from their abstracted state of mind to answer questions. The island is a satire on the Royal Society and especially on Sir Isaac Newton. See SWIFT, JONATHAN.

LAP'WING (AS. *hlæpewince*, lapwing, from *hlæpan*, OHG. *hlaufan*, Ger. *laufen*, to run, Goth. *us-hlaupan*, to spring up + AS. *wincian*, OHG. *wincan*, Ger. *winken*, Eng. *wink*; so called from the jerky motion of the wings, but confused by popular etymology with *lap* + *wing*), or PEE-



THE LAPWING.

WIT. An Old World plover (*Vanellus vanellus*, or *cristatus*), differing from the true plovers chiefly in having a hind toe. It is numerous in summer in all the temperate parts of Europe and Asia, but the majority migrate southward in winter. It is very plover-like in form and habits, and among the most beautiful of shore birds. The head, which is surmounted with a beautiful crest, is black; the throat black in summer and white in winter; the back is green, glossed with purple and copper color. The lapwing is very plentiful in moors, open commons, and marshy tracts, in pairs during the breeding season, and in winter in flocks, chiefly on the seashore, where its plaintive cry suggests the name peewit (or in Scotland peesweep), by which it is known in popular speech. Its artifices to prevent the discovery of its nest are as eager and ingenious as those of other plovers, and, like them, its nest is little more than a depression in the ground containing four eggs. These eggs are esteemed a great delicacy, and great numbers are sent to the London market under the name of plovers' eggs. The bird itself is also highly esteemed for the table. The resulting persecution was so great that the bird nearly vanished from Great Britain; it is now, however, protected by law and is again numerous. Consult: Newton, *Dictionary of Birds* (London, 1893-96); "The Lapwing, Green Plover, or Peewit," in *Agriculture and Fisheries Board of Great Britain, Leaflet No. 44* (9th ed., ib., 1905); and other authorities on British birds. See PLATE OF PLOVERS.

LAP'WORTH, CHARLES (1842-). **AN**

English geologist. He was born at Faringdon, Berkshire; received a pedagogical training at Culham College; taught at Galashiels, Scotland (1864-75), and at Madras College, St. Andrews (1875-81); and from 1881 to 1913 was professor of geology and physiography in the institution at Birmingham early known as Mason College and later as Birmingham University. He also served as a consulting geologist on matters of mining and civil engineering. Lapworth urged strongly the theory of rock fold; investigated the graptolites—*The Geological Distribution of the Rhabdophora* (1879-80)—showing, against Barrande's theory of colonies, the chronological and zonal sequence; and made great contributions to the stratigraphy of the Darness Eribole district of the Scotch Highlands. He received numerous honors—was Bigsby medalist (1887) and Wollaston medalist (1889) of the Geological Society, Royal medalist of the Royal Society (1891), Wilde medalist of the Manchester Philosophical Society (1905), president of Section C of the British Association (1892), and president of the Geological Society (1902-04). The University of Aberdeen gave him an honorary LL.D. in 1883. Besides preparing scientific papers and memoirs, largely on the graptolites and the Lower Paleozoic rocks, he revised the tenth edition of Page's *Physical Geography* (1881), also his *Geology* (1888); edited for the Paleontographical Society a monograph on *British Graptolites* (1900-08), and published *The Geology of South Shropshire* (rev. issue, 1894); *Intermediate Text-Book of Geology* (1899, new ed., 1913); *Relations of Geology* (1904), *Sketch of the Geology of the Birmingham District* (1907); *Tripoli and Young Italy* (1912), with Helen Zimmern.

LA QUINA (la kē'ná') **MAN.** See **MAN**, SCIENCE OF, Ancient Types

LAR, lär. The capital of the Province of Laristan, Persia, situated on a well-wooded plain, at the foot of a ridge of hills, 75 miles from the Persian Gulf and about 180 miles south-southeast of Shiraz (Map. Asia, Central, F 9). The bazar of Lar is said to be the finest and most elaborate in Persia. The chief product is tobacco. Pop. (est.), 8000.

LARA, là'rá. A poem by Byron (1814) and the name assumed by its hero

LA RABIDA, la rá'né-ná. A Franciscan convent near Palos, Spain, restored in 1855. Columbus stopped at the convent on his proposed journey to France to seek assistance in his plans, and through the interest which his conversation aroused in the prior was brought to the notice of Queen Isabella.

LARAMIE, lär'á-mé. A city and the county seat of Albany Co., Wyo., 57 miles by rail northwest of Cheyenne, the State capital, on the Big Laramie River, and on the Union Pacific and the Colorado, Wyoming, and Eastern railroads (Map: Wyoming, F 4). The city is a popular summer resort, being situated on the Laramie plains, near mountains which afford fine scenery and are rich in minerals. It is the see of the Protestant Episcopal missionary bishopric of Wyoming, and among its chief institutions are the State University, the State Agricultural College, and the State Fish Hatchery. Other noteworthy features are the Carnegie library, fine courthouse and Federal buildings, the Elks Home, and the State Museum. The principal industries are stock raising and manufacturing, the industrial plants including flouring mills, a large

ice plant, stockyards, plaster mills, the preserving plant, planing mills, a tannery, a packing plant, and the extensive machine and repair shops and rolling mills of the Union Pacific Railroad Company. First settled in 1868, Laramie was incorporated in 1869 and was chartered as a city in 1884. The present government, under a charter of 1887, is vested in a mayor, elected biennially, a unicameral council, and administrative officials, all appointed by the executive, subject to the consent of the council. The city owns and operates the water works. Pop., 1900, 8207; 1910, 8237, 1914 (U. S. est.), 8250.

LARAMIE MOUNTAINS. A range of the Rocky Mountains in southeastern Wyoming (Map: Wyoming, F 3). It begins on the south bank of the North Platte River, in Natrona County, somewhat southeast of the centre of the State, and extends in a southeasterly direction through Albany and Laramie counties, being cut by the Laramie River and its North Branch. The range is mostly a broad upland, of from 7000 to 8000 feet elevation, with no outstanding summits.

LARAMIE STAGE. A geological formation of western North America, constituting a transition between the marine deposits of the Cretaceous and the fresh-water strata of the Tertiary system. It is now generally classed with the Cretaceous. The Laramie rocks comprise sandstones, conglomerates, and clays, with a thickness of several thousand feet, outcropping along the eastern border of the Rocky Mountains from Mexico northward across the United States into Canada. The formation is of great economical importance, owing to the included deposits of coal. Much of the coal mined in Colorado, Wyoming, Montana, and New Mexico is of Laramie age. The fossils include fresh and brackish water mollusks, land plants, and many species of reptiles, among the reptiles are Plesiosaurus, Claosaurus, and Ceratops. Consult White, "Correlation Papers—Cretaceous," in *United States Geological Survey, Bulletin No. 82* (Washington, 1891). See **CRETACEOUS SYSTEM**.

LARAN'DA. The ancient name of Karaman (q.v.).

LARARIUM. The name given by the Romans to a chapel or spot sacred to the lares (q.v.).

LARASH, là-râsh', or **EL-ARASH**, el-â-rîsh'. A picturesque port of Spanish Morocco, the capital of the Province of Azgar, on the Atlantic coast, 43 miles southwest of Tangier (Map: Africa, D 1). It has ancient walls, an old imposing hall or house for grain trading, a fine mosque, and many ruined edifices. The district is low and unhealthy, but produces considerable fruit. It exports cereals, grain, fruit, goat and sheep skins. Its annual trade amounts to nearly \$2,500,000. The harbor, which is poorly fortified, admits only small vessels. Pop. about 6000, consisting chiefly of Moors.

LARBOARD (ME. *laddebord*, possibly from *lade*, load, from AS., OHG. *hladan*, Ger. *laden*, to load + *bord*, AS. *bord*, OHG. *bort*, Ger. *Bord*, Eng. *board*, side of a ship, probably influenced by the analogy of *starboard*). An obsolete naval term for the left side of a vessel looking forward. From its liability to be confused by the steersman with the not very different sound "starboard," the word was officially abolished, and the expression "port" arbitrarily substituted. In 1913 the United States Navy Department changed the expressions—so far as they concern orders to the steersman—from "port" and "starboard"

to "right rudder" and "left rudder." (See HELM.) The terms "port" and "starboard" are still used in all matters not pertaining to steering.

LARCENY (OF. *larrecin*, *larcin*, Fr. *larcin*, from Lat. *latrocinium*, robbery, from *latrocinari*, to commit highway robbery, from *latro*, highwayman). The wrongful appropriation and carrying away by one person of the personal property of another, with a felonious intent to convert such property to his own use without the consent of the owner. By the common law, larceny was either compound—i.e., the taking and carrying away with felonious intent of personal property from the person or house of the owner—or simple. Simple larceny was called grand larceny where the value of the stolen property was more than 12 pence, and petit larceny where the value was less.

Only personal property can be the subject of larceny at common law. For injuries to the realty a remedy must be sought in trespass. Thus, if one enter upon another's premises and sever and carry away growing crops from the soil or fruit from the trees, he is not guilty of larceny, but is chargeable only in a civil action of trespass for goods carried away; but if an interval elapse after the severing, and the wrongdoer come upon the premises and carry away the property, previously detached from the realty, so that his taking amounts to a distinct transaction from the severance, he is guilty of larceny if other necessary elements of the offense, as intent, etc., concur. By the common law, undomesticated animals (see *FERÆ NATURÆ*) were not the subject of larceny, nor even when domesticated, unless their flesh were used for food. Accordingly, e.g., there was not such right of property in a dog that larceny of him could be committed. The property taken must have some value, however small; but the common law refused to recognize any value in assignable evidences of debt or mere rights to the recovery of debt, so that there could be no larceny of account books or notes or mere personal securities of any kind. But it is otherwise by statute law, which has also removed in most of the United States the distinction between different degrees of larceny.

To constitute larceny, the property must be actually taken and carried away; must be in the absolute possession of the thief; the taking and carrying must be against the consent of the owner or possessor and must be accompanied by a simultaneous felonious intent at the time the property is taken. Every larceny includes a trespass—i.e., an unlawful act—with force real or implied, to another's property; so that the intent necessary to constitute that offense really comprehends two separate items, viz., an intent to commit a trespass upon personal property of another and an intent to deprive him of his property. As trespass is a necessary part of larceny, and possession on the part of the owner is necessary in order to maintain an action of trespass, there can be no trespass against, and consequently no larceny from, an owner not in possession of the property taken. Thus, a common carrier does not commit larceny if he steal a bundle which has been intrusted to him, for he, and not the owner, has the legal possession of the property. The carrier, having possession of the goods, cannot commit trespass. But if he tear the bundle open and steal goods contained in it, he commits larceny; for by breaking open

the bundle he terminates his contract with the owner and loses his right to the possession of, the goods, the taking and conversion of which, added to his act of trespass, make him guilty of larceny. A servant who is intrusted by his master with the care of goods has no legal possession and is chargeable with larceny of such goods.

The taking necessary to constitute larceny must be against the owner's consent, and if such consent be had, though fraudulently gained, there will be no larceny, but an obtaining of goods by false pretenses (q.v.). But it has been held that there is a distinction between the cases of an owner who by fraudulent representations is induced to transfer his goods, and who intends and expects to be divested of his rights of property in them, and the case of an owner who parts for a time, as he supposes, with his property, while at the same time the person who gets possession of the goods intends to convert them to his own use and to deprive the owner permanently of them. It is held that the latter case may be larceny.

The common-law rules on this topic have been materially changed by statute, both in Great Britain and in the United States, and the conversion of goods to one's own use with felonious intent, as in the embezzlement of money which has been intrusted to one, is now generally defined and punished as larceny. This legislation should be examined in each jurisdiction. Consult Bishop, *Commentaries on the Law of Statutory Crimes* (Chicago, 1901), and Clark and Marshall, *The Law of Crimes* (2d ed., St. Paul, 1905).

LARCH (OF. *larege*, *larice*, from Lat. *larix*, Gk. *λάριξ*, larch), *Larix*. A genus of trees of the family Pinacæ, differing from firs (*Abies*) in having the leaves deciduous and in clusters, instead of solitary and persistent. The character of deciduous leaves is a common one with *Taxodium*, the cypress, as distinguished from the other common conifers. The common larch (*Larix decidua*) is a beautiful tree, growing wild on the mountains of the south and middle of Europe and found also in Asia, where it extends much farther north than in Europe. Its perfectly erect and regularly tapering stem, which rapidly attains a height of from 60 to 100 feet, its small branches, its regular conical form, and its very numerous and very small leaves make its aspect peculiar. It is extensively planted as an ornamental tree, for windbreaks, etc., in the United States. It is useful even at an early age, the thinnings of a plantation being employed for hop poles, palings, etc. The older timber is used for a great variety of purposes. It is close-grained, very resinous, has great strength and durability, is not readily attacked by worms, and is much used in shipbuilding. It is, however, very apt to warp and is therefore not well suited for planks. Larch bark is used for tanning, although not nearly equal in value to oak bark. In Siberia the scorched stems yield a gum similar to gum arabic, which is known as Orenburgh gum. In warm countries a kind of sweetish manna (q.v.), with a slight flavor of turpentine, exudes from the leaves of the larch in the hottest season of the year. In France it is known as Briançon manna. The larch woods have of late suffered greatly from a disease in which the centre of the stem decays. The trouble is attributed to the attack of *Polyporus sulphureus* and *Polyporus schœnietzii*, two shelf fungi. The larch is subject to a canker that destroys many trees. The fungus causing it

is known as *Peziza willkommii*. It gains entrance through wounds, destroying the bark. The canker spots enlarge each year. A leaf rust occurs on larch, due to the fungus *Melampsora laricina*, which forms yellow pustules on the leaves. The other stages of the fungus are passed on the poplar. In pure wood plantations or forests the larch frequently suffers severely from these diseases, as well as from the attacks of numerous insects. The larch does not dislike moisture, but stagnant water is very injurious to it, and thorough drainage is therefore necessary.

The American larch, tamarack, or hackmatack (*Larix laricina*), distinguished by very small cones, is common in the northern parts of North



AMERICAN LARCH.

America. It is a noble tree, which sometimes attains a height of 90 feet, and its timber is highly valued in shipbuilding, for fence posts, telegraph poles, railway ties, etc. It is found in North America from Virginia to Hudson Bay and is called hackmatack in parts of Canada, but in the Middle and Western States tamarack. It is occasionally found on uplands, especially in its northern habitats, but in the Middle States it grows mostly in moist soils and shallow swamps, often where the muck or peat is deep. The American larch is inferior to the European tree for ornamental purposes, the latter having more fully leaved and pendulous branches and cones one-half larger. The Himalayan larch (*Larix griffithii*) abounds in the Himalayas, but is generally a small tree of 20 to 40 feet high. Its cones are larger than those of the common larch. See Plate of TAMARACK AND LARCH.

LARCH CONES. See COPROLITES.

LARCHER, lâr'shâ', PIERRE HENRI (1726-1812). A French classical scholar, born at Dijon. After devoting some time to the study of law, he turned to the classics and won fame by a translation, published at first anonymously, of the Greek romance, *Chæreas and Callirrhoe*, of Chariton (q.v.). Through his *Mémoire sur Vénus* (1775), a work in the field of archaeology and mythology, once rated highly, he won admission to the Académie des Inscriptions (1778). In 1809 he became professor of Greek literature at the University of Paris. He translated the *Electra* of Euripides and the *Cyropædia* of Xenophon; but his most important work, the fruit of the labors of 15 years, was his translation of Herodotus, with important notes on historical, geographical, and chronological ques-

tions, with many illustrative citations from ancient and modern authors (7 vols., 1786; repeatedly republished; reëdited as late as 1880, by L. Humbert; translated into English, London, 1829; new edition of the translation, by Cooley, 1844). Consult J. F. Boissonade, *Notice sur la vie et les écrits de Pierre Larcher* (Paris, 1813).

LARCHEY, lâr'shâ', ETIENNE LORÉDAN (1831-1902). A French author and antiquary, born at Metz, son of an artillery general. He was educated at the Collège Saint-Louis and at the Ecole des Chartes. In 1852 he was first employed in the Mazarin Library, and after he had become its librarian went to the library of the arsenal as adjunct curator, of which he was appointed curator in 1880, and where he specialized in historical research and in linguistic study. He edited much correspondence and historical matter and wrote *Un mois à Constantinople* (1855), *Origines de l'artillerie française* (1862), and *Planches autographiées d'après les monuments du XIV^{ème} et du XV^{ème} siècles* (1863); and the linguistic studies, *Les eccentricités du langage* (1860), reprinted in 1883, with the title *Dictionnaire historique, étymologique et anecdotique de l'argot français*, as well as much miscellaneous matter.

LARCHMONT. A village of New York. See MAMARONECK.

LARCH SAWFLY. A sawfly (*Nematus erichsonii*) whose larvæ are very destructive to larch forests in the United States and Canada, especially in northern New England. It also occurs in northern Europe. The eggs are laid in a row upon and within the young larch shoots in June or July, and the larvæ feed upon the leaves until August, sometimes defoliating all of the trees over a large area of hackmatack swamps.

LARCIUS. The name borne by two Romans in early Roman history. 1. Spurius Larcus with Horatius Cocles defended the Pons Sublicius against the Etruscans. See HORATII. 2. Titus Larcus, consul and dictator in 501 B.C., and commander in that year against the Latin cities, which were seeking to restore the Tarquins to Rome. He showed statesmanlike qualities in opposing severe measures against the Latins and in seeking to relieve the lot of the plebeians.

LARCHOM, Lucy (1826-93). An American poet, born at Beverly, Mass. She passed most of her childhood at the seaside and worked as a young woman in the mills at Lowell, Mass. Here she contributed to the *Lowell Offering*, a periodical which existed about 1840-45 as a literary journal for the mill operatives. Her work attracted the notice of Whittier, with whom she afterward compiled *Child-Life and Songs of Three Centuries*. Later she became a student in the Monticello Female Seminary in Illinois and after that a teacher in the Wheaton Female Seminary, at Norton, Mass. In 1865 she became assistant editor (and from 1866 to 1874 was editor) of *Our Young Folks*, since merged in *St. Nicholas*. Before this she published *Similitudes* (1854); *Ships in the Mist, and Other Stories* (1859); *The Sun-Beam, and Other Stories* (1860); *Leila among the Mountains* (1861); *Poems* (1868); *Childhood Songs* (1877); *Wild Roses of Cape Ann* (1880). Her later years were passed chiefly at Beverly Farms, Mass. She died in Boston. Her *Poetical Works* were collected in 1884. Consult Addison, *Life, Letters, and Diary of Lucy Larchom* (Boston, 1894).

LARD (OF., Fr. *lard*, from Lat. *lardum*, *lardum*, *larida*, fat of bacon; perhaps connected with Gk. *λάριος*, *larinos*, fat, *λαρός*, *laros*, pleasant). The fat of the hog. Until after the first quarter of the nineteenth century lard was only used for culinary purposes and as the base of various ointments. Owing to the enormous extent, however, to which pork was produced in America, numerous other uses for lard were discovered, and large quantities were pressed at low temperature to separate the stearin and olein—of which it is composed in the proportion of 62 parts of olein to 38 parts of stearin and palmitin. The stearin was used for candle making, and the olein soon became a very important article of commerce, under the name of lard oil, which was found to be a valuable lubricant for machinery. Ordinary lard is extracted from the fat of the entire animal, *leaf lard* is taken only from the fat that surrounds the kidneys. It is exported from the United States in large quantities. Before the enactment of pure-food legislation in the United States lard was often adulterated. This is seldom the case now.

When fresh and well rendered, lard is white, has a pleasant odor and a mild flavor. As a culinary fat, it is wholesome and is extensively used in pastry making and for shortening doughs of many sorts and for frying.

There are many commercial lard substitutes, with trade names, which resemble it in appearance. Some consist in part, and others wholly, of vegetable fat—the latter sometimes a fat solid at ordinary temperature, made by adding hydrogen to liquid fat by means of some agent as a catalyzer.

LARDER BEETLE. See BACON BEETLE; DERMESTID BEETLE

LARD'NER, DIONYSIUS (1793–1859). An Irish writer on science. He was born in Dublin, graduated at Trinity College there in 1817, and took holy orders, but devoted himself almost entirely to scientific work. He first became known by his *Treatise on Algebraical Geometry* (1823) and by a work on the *Differential and Integral Calculus* (1825). In 1827 he was appointed professor of natural philosophy and astronomy in London University, now University College. He published several original memoirs, but devoted himself mainly to the popular exposition of science, and published a number of excellent "handbooks" of the various branches of natural philosophy; also a book, in 12 volumes, entitled *Museum of Science and Art*. He is best remembered, however, for his *Cabinet Cyclopaedia*, for which he secured the collaboration of the best scientists and authors of the time. In 1840 he eloped with a Mrs. Heavyside and found himself compelled to leave England. He spent five years (1840–45) in the United States, delivering courses of popular scientific lectures in all the principal cities. In 1845 he settled in Paris. His last months were spent at Naples.

LARDY, CHARLES (EDOUARD) (1847–). A Swiss jurist and diplomat, born in Neuchâtel and educated at the University of Geneva. In 1869 he became First Secretary of the Swiss Legation and in 1883 Minister to France. He represented Switzerland in many international congresses, was a member and in 1899 and 1902 president of the Institut de Droit International, and was first Swiss member of the Permanent Arbitration Court at The Hague. He translated into French

(1870; 4th ed., 1886) Bluntschli's *Codified International Law* and wrote on the legislation of the Swiss cantons, on sorcery trials in Neuchâtel, etc., and reports of congresses to which he was a delegate.

LAREAU, lă'rô', EDMOND (1848–90). A French-Canadian politician and author, born at St. Grégoire d'Iberville, Quebec. After completing his education at Ste. Marie de Monnoir, Victoria College, and McGill University, Montreal, he was admitted to the bar (1870) and six years afterward was appointed law professor at McGill. In 1886 he was elected to the Legislature of Quebec Province as Liberal member for Rouville County and retained his seat until his death. Besides editorial work, he wrote: *Histoire du droit canadien* (1872); *L'Histoire de la littérature canadienne* (1874); *Mélanges historiques et littéraires* (1877).

LAREDO, la-ră'dô. A city, port of entry, and the county seat of Webb Co., Tex., 154 miles by rail southwest of San Antonio, on the Rio Grande, opposite Nuevo Laredo, with which it is connected by a bridge and on the International and Great Northern, the Mexican National, and the Rio Grande and Eagle Pass railroads (Map-Texas, C 6). Among the features of the city are the market, Federal building, an old Spanish cathedral, the railroad bridge over the river, a convent, Mercy Hospital, a fine courthouse and jail, Laredo Seminary (Methodist Episcopal South), established in 1882, and a city park of about 65 acres. Laredo is in a fertile agricultural and stock-raising district, which has also valuable mineral deposits, especially of coal; is an important commercial centre with a large international and local trade, exporting bricks, wool, live stock, Bermuda onions, coal, etc.; and has sheet-metal works, broom and mattress factories, car and machine shops, several brick-works, coal mines, wagon, pickle, and cracker factories, a hide establishment, foundries, etc. The city's imports in 1913 amounted to more than \$2,500,000, while its exports were about \$14,000,000. Settled by Spaniards and laid out in 1767, Laredo was long a frontier town of Mexico and bore the reputation of a border town. It was first incorporated about 1848. Pop., 1900, 13,429; 1910, 14,855; 1914 (U. S. est.), 15,461.

LARENTA, LAR'ENTA'LIA. See AOCIA LARENTIA

LA'RES (Lat. pl.; sing. *Lar*; early pl. *Lases*; no satisfactory derivation of the word has been given). Local divinities of the ancient Romans, originally protectors of the tilled land. They belong to the original element in the Roman religion and were in early times worshiped especially in the country. At crossroads or where several pieces of property joined were erected *compita*, or chapels for the *lares compitales*, with an altar on each separate piece of property so that the owner could make his offerings on his own land. At the hearth also was an image or shrine of the *lar familiaris* (the singular is always used till the time of Augustus, in the singular, too, the word came to mean "home"), though properly he is the guardian of the land rather than of the house. The worship of this guardian spirit seems to have been especially connected with the servants of the house or the slave tenants. At the Compitalia, an annual festival held in late December or early January, the slaves were allowed much license, and the rustic feast was an occasion for general merry-

making. At the hearth the lar received an offering on the Kalends, the Nones, and the Ides (see *KALENDS*), as well as at all family festivals. This offering usually consisted of food or drink, or merely garlands or incense, only on very solemn occasions, as after a death, was a victim sacrificed. Alongside these *lares privati*, or lares of the individual estate or household, were the *lares publici*, or *lares praestites*, who watched over the public lands, and whom the Arval Brothers (q.v.) invoked in their ancient hymn. They had a temple and altar on the Via Sacra, near the Palatine, they wore the chlamys (q.v.), carried lances, and had a watchdog at their feet. The worship of the *lares compitales* even entered the city of Rome, though under the Republic it does not seem to have been found within the ancient limits of the Septimontium. The *collegia compitalicia*, who celebrated this worship, were made up of freedmen and slaves, thus to the lower classes, and proving

a source of disorder that the Senate in 64 B.C. attempted their suppression; they were finally abolished by Cæsar. Under Augustus the whole worship received a new direction. He established a *compitum* in each of the *vici* into which he divided the city of Rome, where the lares, now called *lares Augusti*, were worshiped, between them was worshiped also the genius of the Emperor. This worship spread through Italy and the provinces and even was adopted in the household cult, where we now find the two lares with the genius of the house owner between them. There were also *lares vales* and *lares permarini*. The lares are regularly represented as dancing youths, in short tunics, high girt, holding a cup or patera in one hand, into which they pour wine from a horn held aloft in the other. For an illustration showing the lares, consult Mau-Kelsey, *Pompeii: Its Life and Art* (2d ed., New York, 1902). The type was an old one and evidently refers to the feasting and dancing of the early rural festival. Though originally distinct from the penates (q.v.), the lares came ultimately to be virtually identified with them. Consult: Fowler, *Roman Festivals* (London, 1899); Mau-Kelsey, *Pompeii: Its Life and Art* (2d ed., New York, 1902); Wissowa, *Religion und Kultus der Römer* (2d ed., Munich, 1912).

LA REY, JACOB HENDRICK DE. See DE LA REY, J. H.

LAR'GESSE, or **LAR'GESSE** (OF., Fr. *largesse*, It. *larghezza*, bounty, from Lat. *largiri*, to give generously, from *largus*, large, abundant). Literally, 'giving freely'; later meaning 'equal to bounty.' It was a term used commonly by the minstrels in the Middle Ages, who cried "a largesse." At a later period it became the custom to grant certain fees to heralds for their services on state occasions, and these were called a largesse. According to Skeat, "the term is still used in some parts by gleaners, who cry 'largesse' when they see a stranger passing by."

LARGHETTO, lăr'gĕt'tō. See LARGO.

LAR GIBBON. See GIBBON.

LARGILLIÈRE, lăr'zhĕl'yâr', NICOLAS (1656-1746). A French portrait painter. He was born in Paris, the son of a wealthy hatter, who afterward settled at Antwerp. In this city, still dominated by the art of Rubens, he passed most of his youth, and he studied under Antoine Goubaux. In 1674 he went to England and worked under Sir Peter Lely, who employed him in restorations. He soon received the favor of Charles II, but was expelled in 1678 by an ordi-

nance of Parliament against Catholic strangers. Returning to Paris, he was befriended by Lebrun and Van der Meulen and soon became one of the foremost portrait painters. On the invitation of James II he returned to London in 1685 and painted portraits of the King and his Queen, but declined flattering offers to remain, and afterward lived in Paris, where he became rector (1722) and chancellor of the Academy (1743). Besides single pictures, he also excelled in large portrait groups, such as the votive picture once at Saint-Étienne du Mont (1694). He painted single portraits of all the celebrities of the time, with lively color and much elegance, and is said to have produced more than 1500 portraits. His works have often been engraved, notably by Brevet. They are best represented in the Louvre, which possesses 13 examples, among others the portraits of Largillière and his family, the painter Le Brun, "Un Echevin" (alderman), the Count of Chatre, and others. He is well represented in French provincial museums; in the Berlin Museum by the portrait of his father-in-law, Jean Forest; in the National Portrait Gallery, London, by portraits of Prince Charles Edward Stuart, and the latter's brother Cardinal York. In the Wallace collection, London, by Louis XIV and his family, and in the Metropolitan Museum, New York, by Madame de Thorigny. Consult Foster, *French Art from Watteau to Prudhon*, vol. 1 (London, 1905), and Roujon, *Les peintres illustres* (Paris, 1913).

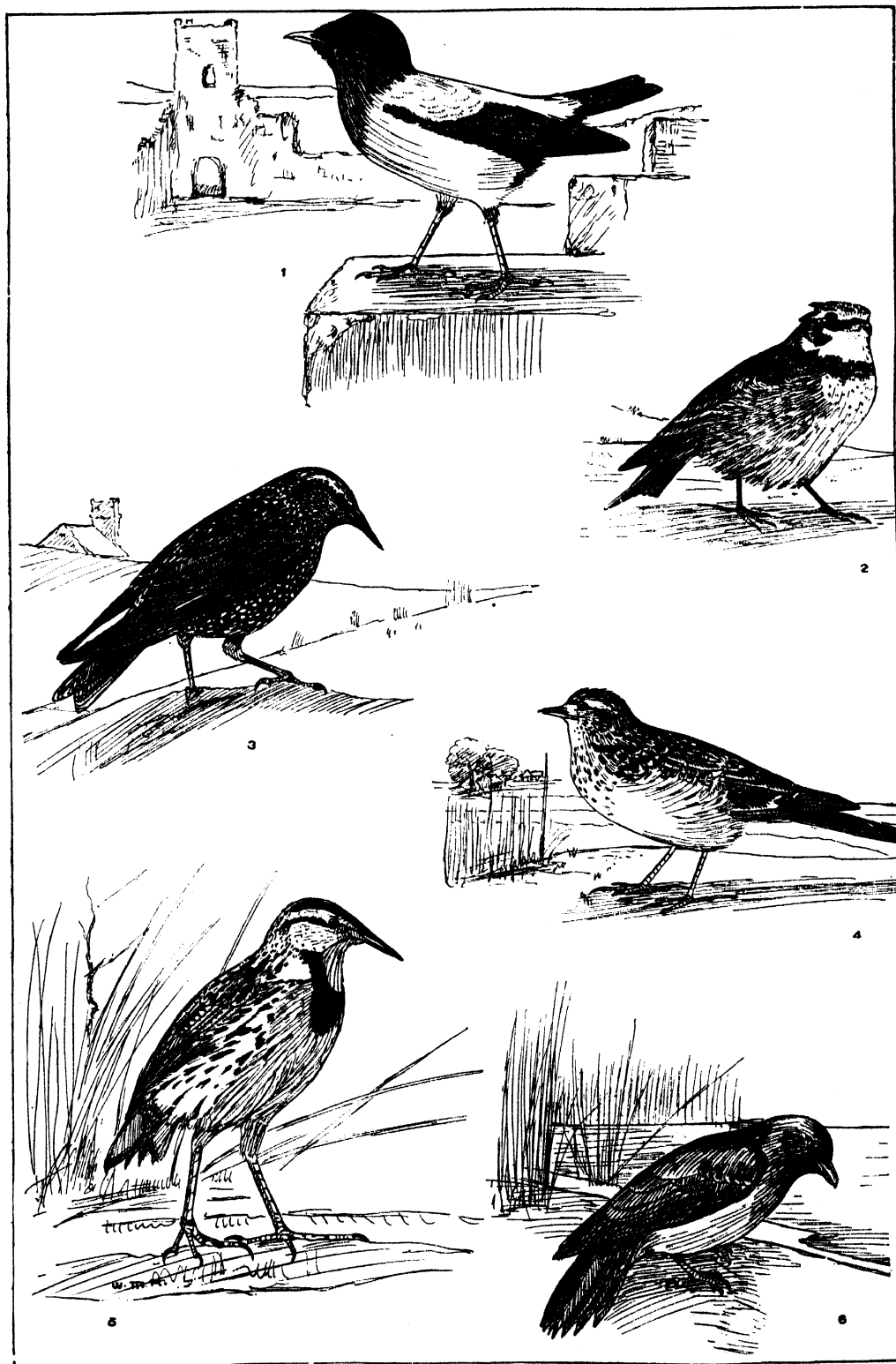
LARGO, lăr'gō (It., large). A word used in music to denote the slowest of all the tempi and especially in compositions where the sentiment is quite solemn. It is very seldom used for entire movements, because the characteristic heaviness of this tempo is too oppressing. For a short introduction (q.v.) to a following allegro the largo is very effective, and a great favorite with composers writing in the sonata form. Beethoven in his Sonata op. 13 employs this tempo in a masterly manner for the introduction, and also, for the sake of contrast, for an episode within the allegro itself. The diminutive of largo is larghetto and denotes a time somewhat faster than largo. It is not an uncommon designation for the slow movement of a symphony or sonata.

LARGS, lăr'gz. A favorite resort for seabathers in Ayrshire, Scotland. It is situated on the Firth of Clyde, 36 miles southwest of Glasgow (Map: Scotland, D 4). It is known as a yachting centre; there is some fishing. Pop., 1901, 3246, 1911, 3724. Here, in 1263, Alexander III of Scotland, in the course of a war with the Norwegian colonies of Man and the Isles, defeated Haakon, the King of Norway, who, with 160 ships and 20,000 men, had descended upon the coast of Ayrshire.

LARI, lăr'rĕ. A city in the Province of Pisa, Italy, 8 miles by stage from Pontedera, which is 13 miles by rail east of Pisa. The city has an infant asylum and a theatre. The country produces grain, wine, and oil, and there are hot springs in the vicinity. Pop. (commune), 1901, 12,432; 1911, 12,268.

LA'RI (Neo-Lat. nom. pl., from Lat. *larus*, Gk. *λάρος*, gull). A suborder of birds, including gulls, terns, skuas, and skimmers (qq.v.), characterized by their long, pointed wings, nostrils open but not tubular, hind toe small and free, or rarely wanting. The bill is very variable, but never has lamellæ. The feet are fully

LARKS AND STARLINGS



1. ROSE-BREASTED PASTOR (*Pastor roseus*).
2. HORNED or SHORE LARK (*Otocoris alpestris*).
3. ENGLISH STARLING (*Sturnus vulgaris*).

4. SKYLARK (*Alauda arvensis*).
5. MEADOW LARK (*Sturnella magna*).
6. RED-BILLED OXPECKER (*Buphaga erythroryncha*).

webbed and provided with compressed curved claws. The plumage is soft, dense, and simply colored; bright colors are rare, except on the bill and feet, and the sexes are alike in color. The nest is ordinarily on the ground, and the eggs are about three, white with heavy blotches. They are chiefly marine birds, but are also found about large bodies of fresh water. More than 125 species are known, residing in all parts of the world.

LARIO, lá'rè-ò, LAKE (Lago di Lario). Another name for Lake Como (q.v.), Italy.

LAR'IOSAURUS (Neo-Lat., from Lat. *Laurus*, ancient name of the Lago di Como + Gk. *sauros*, *sauros*, lizard) A small extinct reptile. 3 feet long, of the order Sauropterygia, found fossil in the Triassic shales of northern Italy. It is related to the Plesiosaurs. See PLESIOSAURUS; REPTILE.

LARISA. See LARISSA.

LARIS'SA. The capital of the nomarchy or province of the same name in Thessaly, Greece (Map: Balkan Peninsula, D 5) It is situated on the Salamvria (ancient Peneus), 33 miles northwest of the port of Volo, with which it is connected by rail. It carries on an important transit trade, has manufactures of silk and cotton goods, and is a military headquarters as well as the seat of a Greek metropolitan. Pop., 1880, 13,610, 1896, 15,517; 1907, 18,041. In ancient times Larissa (Larisa) was regarded as the capital of Thessaly and was the residence of the reigning family of the Aleuadae. It was a large and wealthy city far into the Middle Ages. Long held by the Ottoman Turks, it was finally ceded to Greece in 1881. At that time fully one-third of the population was Turkish, a proportion which has since steadily declined. It was the headquarters of the Greek army in the war against Turkey in 1897, and an important centre of activity at the beginning of the Balkan War in 1913.

LA RIVE, la rév, AUGUSTE DE. See DE LA RIVE.

LA RIVE, CHARLES GASPARD DE (1770-1834). A Swiss physicist and chemist, born in Geneva. He studied medicine and the natural sciences in Edinburgh, became associate in the Academy of Geneva in 1802, and distinguished himself by researches in chemistry and natural history. He invented a galvanometer. Among his works may be noted: *Observations* (upon the conversion of starch into sugar), and *Essai sur la théorie des proportions chimiques et sur l'influence chimique de l'électricité*. De la Rive took an active part in the political life of Switzerland, was a member of the provisional council in 1813, and in 1817 became president of both councils of the Republic, but retired from public life in 1818 to proceed with his scientific work. He founded the museum of natural history and the botanic garden at Geneva.

LARIVEY, lá'rèvâ', PIERRE DE (c.1550-c.1612). A French dramatist, born at Troyes. His family was Italian, and he was a canon of the church of St Etienne at Troyes, but aside from these facts little is known of his life. In 1577 he began to write a series of prose comedies adapted from the Italian. Their fresh, natural dialogue and lively scenes make them the most important contribution to this kind of literature produced in the latter part of the sixteenth century. They were borrowed from by Molière. Six of them appeared in 1579 and three in 1611. They have been reprinted in

Viollet-le-Duc and Jannet's *L'Ancien théâtre français*, vols. v-vii (1879).

LA RIVIERE, lá'rèvyâr', ALPHONSE ALFRED CLÉMENT (1842-). A Canadian journalist and official. He was born in Montreal and was educated at St. Mary's College, Montreal. His journalistic experience was gained as special correspondent of *La Minerve* of Montreal and as editor of *Le Manitoba* and of *Le Canada* of Ottawa. In 1871 he was appointed to a position in the Dominion Lands Office, Winnipeg, and afterward became prominent in the affairs of Manitoba, as member of the Provincial Assembly, Provincial Secretary, Minister of Agriculture, and Treasurer. He served as president of the Board of Arts and Manufactures of the Province of Quebec, also as superintendent of Roman Catholic schools of Manitoba. In 1889-1904 he was a Conservative member of the Dominion Parliament and in 1905 was appointed Immigration Commissioner for Manitoba. In 1911 he was called to the Dominion Senate.

LA'RIX. The name of a genus of coniferous trees. See LARCH.

LARK (AS. *lærfce*, *lauerce*, OHG. *lërähhâ*, *lërehhâ*, *lërihhâ*, Ger. *Lerche*). Several different birds are called larks, but properly only those of the family Alaudidæ, of which skylarks and shore larks are good examples. The Alaudidæ are a small family of scarcely more than 100 species, very well characterized by the structure of the feet, in which the hind claw is very long and straight, and the tarsi are scutellate behind as well as in front, and the two series of plates meet along a vertical groove on the inner side of the tarsus. By many this is regarded as a very generalized character, and the group is accordingly assigned to one of the lowest positions in the order Passeres. Larks are small and mostly brownish birds, more or less streaked, but the shore larks show more or less yellow, white, black, rufous, and pinkish. They are most abundant in Africa, but are common in Europe and parts of Asia, while uncommon in Australia and America. Only a single genus occurs in the New World, that of the shore or horned larks (*Otocoris*). All of the larks are terrestrial birds, which nest and feed on the ground, and the food consists of seeds, worms, and insects. They are generally migratory, and some of them are great wanderers. Except during the breeding season they are very gregarious and are often seen in enormous numbers. The nests are generally made in open fields and the eggs, four or five in number, are dull and more or less speckled and blotched. The titlarks and meadow larks of America are not true larks, but belong to totally distinct families. See SHORE LARK; SKYLARK; and Plate of LARKS and STARLINGS.

LARKA-KOLS. See KOLARIAN PEOPLES.

LARK BUNTING. An American fringilline bird (*Calamospiza melanocorys*) which inhabits the plains and mountain valleys of the West from Kansas to Utah. It curiously combines the features of a grosbeak with the habits of a lark, being eminently a terrestrial bird in all its relations. It has a remarkably varied and brilliant song, which it often utters while soaring, much after the manner of the skylark. The plumage of the male, at the height of the breeding season, is uniform black, with a large conspicuous white patch on the upper part of the wing; the female is a streaked brownish gray with a smaller wing patch. At the close of the

breeding season the males lose their black color and assume the colors of the females and young, very much as does the bobolink. Excellent accounts of the habits and singing of this bird may be found in Coues, *Birds of the Northwest* (Washington, 1874), and Keyser, *Birds of the Rockies* (Chicago, 1902).

LARK FINCH, or **LARK SPARROW**. A small, pale-colored sparrow (*Chondestes grammacus*), very numerous on the prairies and plains of the western United States. Its song is animated and larklike and is very pleasing. It is not wholly terrestrial and is found in wooded and hilly places as well as on open lands.

LARKIN, JAMES (?-). An Irish labor leader. He organized the Irish Transport and General Workers' Union, of which he was secretary until his resignation in 1914. In this union he attempted to unite all Irish workmen, both skilled and unskilled, in one organization. He was especially active in the Dublin timber strike and the Irish railways' strike in 1911 and in the Dublin Transport Workers' strike in 1913. In connection with his labor agitation he was convicted on a charge of false pretenses in 1910, but the sentence was remitted; and in October, 1913, he was found guilty of sedition, was sentenced to seven months' imprisonment, but was released shortly afterward. The imprisonment served only to increase his reputation among his followers, besides arousing sympathy among other classes. In 1912 Larkin was elected to a seat on the Dublin Corporation. He was editor of a weekly labor paper, the *Irish Worker*. The movement which grew from his extraordinary influence among Irish workers came to be described as Larkinism; it represents in Ireland much the same phase of the whole labor movement as the revolutionary syndicalism of Europe or the American I. W. W.

LARK'SPUR (so called from the spurlike



LARKSPUR.

formation of the calyx and petals), *Delphinium*. A genus of plants of the family Ranunculaceæ,

annual and perennial herbaceous plants, natives of the temperate and cold regions of the Northern Hemisphere. The species, of which about 100 have been described, have five sepals, the upper spurred; four petals, distinct or united into one, the two upper having spurs inserted into the sepaline spur; and one to five many-seeded follicles. Many species are cultivated as ornamentals, among which the annuals *Delphinium ajacis* and *Delphinium consolida*, natives of Europe, and the perennials *Delphinium grandiflorum*, *Delphinium hybridum*, and *Delphinium formosum*, all natives of Asia, and their many varieties are the most popular. Among the more common American species are *Delphinium tricornis* and *Delphinium exaltatum*, found from Pennsylvania to Minnesota, and southward; and *Delphinium menziesii*, *Delphinium nudicaule*, and *Delphinium scopulorum* of the Western States and Pacific coast. *Delphinium staphisagria*, called stavesacre, cultivated in Europe, is used in medicine. It contains a number of alkaloids, having in general the same action as aconite. Numerous cases of stock poisoning due to eating larkspur are reported from the Western ranges. Horses and cattle seem subject to larkspur poisoning, while sheep are practically immune.

LARKSPUR, YELLOW. See TROPÆOLUM.

LARKSVILLE. A borough in Luzerne Co., Pa., 2 miles west of Wilkes-Barre, on the Susquehanna River. It is situated in a rich coal district, the mining of which constitutes the chief industry. Pop., 1910, 9288.

LARMES, larm (Fr., tears). A charge in heraldry (q.v.). When the field is bestrewn with an indefinite number of drops of a blue color, it is said to be *gutté de larmes*—a term peculiar to British heraldry.

LARMINIE, WILLIAM (?-1899). An Irish poet, born in County Mayo, Ireland. He lived most of his life in or near Dublin, and his work is a part of the movement known as the Irish Literary Revival (see IRISH LITERATURE, *In English*). He is of that group of Irish poets who chose to use Gaelic myth and romance as the machinery of their poetry and to inspire the ancient legends and sagas with modern and living hopes and aspirations. At his best, as in his dramatic poem, "Moytura," he shows himself a poet of sustained imaginative power. His books are: *Glanlua and Other Poems* (1889); *Fand and Other Poems* (1892); *West Irish Folk Tales and Romances* (1893).

LARMOR, lăr'mor, SIR JOSEPH (1857-). A British physicist, born in Maghergall, County Antrim, Ireland. He was educated at Queen's College, Belfast, and at St. John's College, Cambridge; taught natural philosophy in Queen's College, Galway, from 1880 to 1885; and from 1885 to 1903 was lecturer on mathematics and then Lucasian professor of mathematics at Cambridge University, which elected him, as a Unionist, to Parliament in 1911. He was knighted in 1909, was secretary of the Royal Society in 1901-12, and received honorary degrees from most of the British universities. Besides many contributions to technical journals, he wrote *Æther and Matter* (1900), particularly important for its theory that an atom is an aggregation of positive and negative electrons.

LARNACA, or **LARNAKA**, or **LARNICA** (Lat. *Citium*, Gk. *Klriov*, *Kition*). A town of Cyprus (q.v.) in lat. 34° 55' N. and long. 33°

38' E., on the south coast of the island (Map: Turkey in Asia, B 3). It has a good roadstead, but the town is not attractive, though it has improved since the English occupation. The chief public buildings in Larnaca are the Greek church of St. Lazarus, a Roman Catholic church, and a Franciscan monastery. Larnaca is the chief seat of the commerce of the island, and the residence of European merchants and consuls, whose homes are for the most part in the Marina, or part of the city situated on the shore and a short distance from Larnaca proper. At the Marina are also the public offices. The facilities for landing have been improved by the erection of two iron piers, though large vessels are still obliged to anchor in the roadstead. Pop., 1914, about 9000. The ancient Citium was probably a Phœnician settlement, and many scholars hold that it gave its name to the island, which is identified with the land of Kittim mentioned in the Bible. The city seems to have long kept its Phœnician character, as a number of inscriptions in that language have been found on the site, though later the population was largely Greek. Mycenaean tombs, too, have been found. It was the native place of Zeno, the founder of the Stoic school of philosophy.

LARNAUDIAN EPOCH. The name applied to an epoch in European prehistoric archaeology at the close of the Bronze age and so called from the station of Larnaud in the Jura Mountains. See NEOLITHIC PERIOD.

LARNE, larn. A seaport town and summer resort of Ireland, in County Antrim, on Lough Larne, 20 miles north of Belfast (Map. Ireland, F 2). A mail steamer sails daily between Larne and Stranraer in Scotland, 35 miles distant, the shortest sea passage between Great Britain and Ireland. The project of a tunnel to Portpatrick, Scotland, has long been mooted. Pop., 1911, 8036.

LARNED. A city and the county seat of Pawnee Co., Kans., 240 miles by rail west by south of Topeka, at the confluence of the Arkansas and Pawnee rivers, and on the Atchison, Topeka, and Santa Fe and the Missouri Pacific railroads (Map. Kansas, C 6). It is the shipping centre of a fertile wheat and stock-raising country and has flour mills, foundry and machine shops, an ice factory, etc. The city contains a State hospital for the insane, a large experimental farm, the Larned Sanitarium, a hospital, city library, and old Fort Larned military reservation and fort. There are municipally owned water works and an electric-light plant. Pop., 1900, 1583; 1910, 2511.

LARNED, JOSEPHUS NELSON (1836-1913). An American author and librarian, born at Chatham, Ontario, Canada, and educated in the public schools of Buffalo, N. Y. He was on the editorial staff of the *Buffalo Express* in 1859-72, superintendent of education in Buffalo in 1872-73, and superintendent of the Buffalo library in 1877-97. In 1893-94 he served as president of the American Library Association. He is author of *Talks about Labor* (1877); *A Talk about Books* (1897); *History of England for Schools* (1900); *A Multitude of Counsellors* (1901); *Primer of Right and Wrong* (1902); *History of the United States for Secondary Schools* (1903); *Seventy Centuries. A Survey* (1905); *Books, Culture, and Character* (1906); *A Study of Greatness in Men* (1911); *A History of Buffalo* (1911). He edited *The Litera-*

ture of American History (1902) and *History for Ready Reference* (7 vols., 1895-1910; rev. ed., 1913).

LAR/NICA. A town in Cyprus. See LARNACA.

LA ROCHE, là rôsh, KARL (1794-1884). An Austrian actor, born in Berlin. Thanks to Iffland's influence, he went on the stage, making his first appearance in Dresden at 17 and playing in Danzig, Lemberg, Berlin, Königsberg, and, in 1823, Weimar, where he met Goethe. In 1883, after several tours, he was engaged for life in the Vienna Hofburgtheater. He received the order of the Iron Crown, with the title of Chevalier, in 1873. His rôles were many and varied and were famed for their naturalness and the conscientious study of the author which they evidenced. Chief among them were Mephistopheles (a part La Roche learned under Goethe's supervision), Lear, Shylock, Cromwell, and Malvolio. Consult Mautner, *Karl La Roche* (Vienna, 1873).

LA ROCHE, SOPHIE. (1731-1807). A German novelist, born at Kaufbeuren. After her father's second marriage Sophie was sent (1750) to Biberach to live with the Wieland family. Her love affair with the young son of this family, Christoph Martin Wieland (q.v.), ended in a platonic friendship. The young poet wrote of her under the names Doris, Serena, and Sylvia. In 1754 she married Georg Michael Frank von La Roche (or Lichtenfels); their home near Coblenz became a meeting place for the literary men of the day. Goethe celebrates it in the thirteenth book of his *Dichtung und Wahrheit*. Her novels are written in the letter form of Richardson, and the characters of her best-known novel, *Geschichte des Fräulein von Sternheim* (1771), resemble those in *Clarissa Harlowe*. Her other books are: *Moralische Erzählungen* (1782); *Geschichte von Miss Long* (1789); *Schönes Bild der Resignation* (1795), and *Melusiens Sommerabende* (1806). Consult: Ludmilla Assing, *Sophie Laroche* (Berlin, 1859); H. Loeper, *Goethes Briefe an Sophie Laroche* (ib., 1879); Ridderhoff, *Sophie La Roche, die Schülerin Richardsons und Rousseaus* (Einbeck, 1895).

LA ROCHEFOUCAULD, là rôsh'fôô'kô', FRANÇOIS (1613-80), sixth DUKE OF, PRINCE OF MARCILLAC. A French epigrammatic moralist, born in Paris, Dec. 15, 1613. He is a type of the cynical satirist of human nature. Of ancient and powerful family, he had little scholastic education, but was an apt pupil in the school of public life. He joined the army at 16, being already nominally married to Andrée de Vivonne, of whom little is known. He served in the army for some years bravely but without distinction, became attached to Madame de Chevreuse and through her to Queen Anne, and engaged in intrigues against Richelieu and in the plots of the Fronde. His *Apologie du prince de Marcollac* appeared in 1649. His father died in 1650. He was shot in the head at the battle of the Faubourg Saint-Antoine, 1652, spent some years in country retirement, returned to court shortly before Mazarin's death, became a leading light of the literary salon of Madame de Sablé, was vexed and imperiled by the publication of alleged *Mémoires* in 1662, and in 1665 published anonymously his famous *Maximes*, under the title *Réflexions ou sentences et maximes morales*. From this year till his death (March 17, 1680) he was a close friend of Madame de La Fa-

yette (q.v.) and lived in dignity and honor, troubled only by the gout, of which he died. His *Mémoires*, first published in an approximately genuine form in 1817, are among the best of a time peculiarly rich in this form of writing; his *Lettres*, first published in 1818, are of great historic and social interest; his *Maximes*, passing through five editions in his lifetime and increased by 50 in an edition of 1893, are astonishingly acute analyses of motive. They combine to a degree never surpassed clearness, point, pregnancy, and brevity. The social philosophy that they enforce is that of self-interest, "in which all virtues are lost like rivers in the sea"; but it is an inference, not a doctrine. There are some 700 of these maxims, often of but two or three lines, never of more than 20, and all so expressed as to be an enduring artistic delight. La Rochefoucauld's *Œuvres* are admirably edited by Gilbert and Gourdault (3 vols., Paris, 1868-84). Editions of the *Maximes* are many. The finest is the *Édition des bibliophiles* (1870).

Bibliography. Levasseur, *La Rochefoucauld* (Paris, 1862); Sainte-Beuve, *Causeries*, vol. ii (ib., 1881); Deschanel, *Pascal, La Rochefoucauld, Bossuet* (ib., 1885); Rahstedt, *Studien zu La Rochefoucauld* (Brunswick, 1888); Bourdeau, *La Rochefoucauld* (Paris, 1895); Hémon, *La Rochefoucauld* (ib., 1896); R. Grandsaignes d'Hauterive, *Le Pessimisme de La Rochefoucauld* (ib., 1914), containing a bibliography.

LA ROCHEFOUCAULD-LIANCOURT, lyān'kōōr', FRANÇOIS ALEXANDRE FRÉDÉRIC, DUKE OF (1747-1827). An eminent French philanthropist. In the period preceding the outbreak of the French Revolution he devoted himself to the study and practice of benevolent works, founding on his estate near Clermont a model school for the education of the children of poor soldiers. He was a representative of the nobles of Clermont in the States-General, where he displayed remarkable activity in matters concerning the amelioration of the condition of the poor and the defective. After the dissolution of the National Assembly he was made lieutenant général and placed in command of the Department of Normandy. He fled from the Terror to England (1792) and visited North America (1795-97), a journey on which he published *Voyage dans les États-Uns d'Amérique* (8 vols., 1798). He wrote also *Les prisons de Philadelphie* (1796), in which he advocated radical penological reforms and the abolition of capital punishment. From 1799 La Rochefoucauld-Liancourt lived quietly in Paris, occupied only with the extension of vaccination and similar works of benevolence. Napoleon restored to him his ducal title in 1809. After the Restoration he was made a peer, but soon gave offense to the court by opposing its unconstitutional policy. He founded the first savings bank in France.—His second son, ALEXANDRE, Count of La Rochefoucauld (1767-1841), served under Lafayette in the early years of the Revolution, but fled the country at the same time as his father. Under Napoleon he was diplomatic representative at the Saxon court, at Vienna, and in Holland. After the fall of Napoleon III he was a member repeatedly of the Chamber of Deputies and in 1833 was raised to the peerage.

LAROCHEJACQUELEIN, là-rōsh'zhāk'lān', DU VERGER DE. An ancient and noble family of Poitou in France, distinguished for its devotion to the cause of the Bourbons after 1789.—HENRI

DU VERGER, Count de Larochejacquelein (1772-94), was born at the château of La Darbellière, near Châtillon, became an officer in the Guard of Louis XVI, and after the bloody event of Aug. 10, 1792, left Paris and joined the Royalists in La Vendée. He fought in all the long series of battles at Aubiers, Beaupréaux, Thouars, Fontenay, Saumur, and Chatonay. After the decisive defeat at Cholet (October, 1793) he was made generalissimo of the Vendean forces, though only 21 years of age. He led his men successfully for a time, took Laval, but was defeated by Westerman and Marceau at Le Mans, Dec. 13, 1793, and his army was scattered. He raised a new body of troops in Upper Poitou, but was killed in a battle at Nouaille, March 4, 1794.—His brother, LOUIS DU VERGER, Marquis de Larochejacquelein (1777-1815), was born at Saint-Aubin, emigrated at the commencement of the Revolution, returned to France in 1801, but resisted all Napoleon's efforts to win him, and in 1813 placed himself at the head of the Royalists in La Vendée. Louis XVIII appointed him in 1814 to the command of the Army of La Vendée, and during the Hundred Days he maintained the Royalist cause there, supported by the British. He fell in battle at Pont-des-Mathis, June 4, 1815.—His wife, MARIE LOUISE VICTOIRE, Marquise de Larochejacquelein (1772-1857), published *Mémoires* (1855) treating of the war in La Vendée, of which she was an eyewitness.—HENRI AUGUSTE GEORGES DU VERGER, Marquis de Larochejacquelein (1805-67), son of Louis, was made a peer in 1815, fought for the Holy Alliance in Spain in 1823, and joined the Russians against the Turks in 1828. He brought about a rising in La Vendée against the July monarchy and was an uncompromising Legitimist till 1848, when he accepted the Republic, sat in the Constituent and Legislative assemblies and became an adherent of Louis Napoleon, who made him senator in 1852.—JULIEN MARIE GASTON DU VERGER, Marquis de Larochejacquelein (1833-97), was elected in 1871 as a member of the National Assembly and later of the Chamber of Deputies, where he was one of the leaders of the monarchist opposition, to which he belonged until his death. He approved of the parliamentary coup d'état of 1877 and voted regularly against the Republic, thus upholding the Royalist traditions of his family.

Consult: Nethut, *Vie de Mme la Marquise de Larochejacquelein* (Paris, 1870); Anon., *Henri de la Rochejacquelein et la Guerre de Vendée* (Nivet 1890); M. M. Scott, *Life of Madame de la Rochejacquelein* (London, 1911).

LA ROCHELLE. See ROCHELLE, LA.

LAROMIGUIÈRE, là'rō'mé'gyār', PIERRE (1756-1837). A French philosopher, born at Lévignac. He was professor of philosophy at Toulouse, but was not acceptable because of the views he published on the relations of property and taxation. But his success was greater when he went to Paris, where he was professor of logic in the Ecole Centrale, later held a chair in the Prytanée (Lycée Louis-le-Grand), and in 1811 became professor in the faculty of letters, University of Paris. In 1796 he was made an associate of the Institute and in 1833 a member of the Academy of Moral and Political Sciences. He became a member of the Tribunate (see end of article FRENCH REVOLUTION) in 1799. His works are: *Projet d'éléments de métaphysique* (1793), two *Mémoires* read before the Institute, treating the

analysis of thought and the meaning of the term "idea"; *Les paradoxes de Condillac* (1805), completing his work as editor of his teacher (1798) and enunciating the equational theory of the judgment after the manner of Condillac, but with his own addition of the important part played by attention, and *Leçons de philosophie* (1815-18).

LA RONCIÈRE LE NOURY, là rôn'syâr' lê nōō'rê', CAMILLE ADALBERT MARIE CLÉMENT, BARON DE (1813-81). A French vice admiral, born in Turin. He entered the navy in 1830 and became captain in 1855. In 1856 he commanded Prince Napoleon's expedition to the Polar Sea and, in 1860-61, in the Levant. He was promoted rear admiral in 1861, conducted the evacuation of Mexico in 1867, became vice admiral in 1868, and in 1870 commanded the marines at the Paris forts. He was commander in chief at Saint-Denis and took a conspicuous part in the battles before Paris. In the National Assembly and in the Senate, to which he was elected in 1871 and 1876 respectively, he favored the Bonapartists. He wrote *Considérations sur les marines à voiles et à vapeur de France et d'Angleterre* (1844) and *La marine au siège de Paris* (1872). His biography was written by Jancigny (Evreux, 1881).

LA ROTHIERE, là rô'tyâr'. A village in the Department of Aube, France, about 7 miles southwest of Brienne. Pop., 1911, 94. It is noted as the scene of a stubborn contest between Napoleon I and the allies under Blücher, Feb. 1, 1814. The French, who numbered some 45,000 men, were attacked in a strong position by Blücher with more than twice the number of troops, and after a sanguinary struggle the allies succeeded in driving the French from La Rothière. The loss on each side was about 4000 men.

LAROUSSE, là'rōōs', PIERRE ATHANASE (1817-75). A distinguished French grammarian, lexicographer, and encyclopædist, born at Toucy. He was the son of a village blacksmith. He became a high-minded Republican, identified with the dominating influences of his time. He gained notice and wealth as a writer of textbooks and an educational publisher. In his works the general aim—new in that day—was to aid the pupil to think for himself rather than to depend on his memory. In 1858 Larousse founded a journal of instruction, *L'Ecole Normale*. He finally employed his fortune in starting the *Grand dictionnaire universel du XIXe siècle* (1865-76). On this great undertaking rests his fame. It is a vast compilation of 15 volumes, with supplementary volumes, all in nonpareil. (See *ENCYCLOPÆDIA*.) The success of this work, which was first published in installments by subscription, was immediate and enormous, owing in part to its anecdotic character and the facilities it afforded journalists. It may be described as discursive, conversational, entertaining, rather than scholastic and critical, diffusive and liberal rather than methodical and imposing. The work is kept abreast of the times by the weekly *Revue Encyclopédique*; and there is published also, in connection, the small and popular *Dictionnaire complet illustré*, which is revised annually. The *Nouveau Larousse illustré* was published by Claude Augé (1898-1904). It is supplemented by a volume which appeared in 1906-07 and by the *Nouveau Larousse Mensuel*, which is indexed annually.

LARRA, lăr'râ, MARIANO JOSÉ DE (1809-37), best known as FIGARO. A Spanish satirist and critic, born in Madrid. He studied law at Valladolid and made his appearance in literature with a series of letters (1828-32), published in various short-lived sheets (*El Duende Satírico*, *El Pobrecito Hablador*) and written under several pseudonyms (*El Duende Satírico*, *El Pobrecito Hablador*, Andrés Niporeas, Ramón Arriala, an anagram, and *El Bachiller Juan Pérez de Munguía*). After the fourteenth number the pamphlet called *El Pobrecito Hablador* was suppressed by the government. Then Larra began his brilliant satirical studies, printed in *La Revista española*, in *El Mundo*, and elsewhere, under the pseudonym Figaro. He was bitter, pessimistic, and often savage in his attacks on contemporary politics, society, art, and letters; "but," a biographer says, "for unflinching courage, insight, and sombre humor, Larra has no equal in modern Spanish literature and scarcely any superior in the past." Made desperate by domestic difficulties and his own unfortunate temperament, he committed suicide in Madrid. Among his unpublished writings were found a completed historical drama *El Conde de Fernán González*, some verses, and a complete translation of Cooper's novel *The Pilot*. Besides his journalistic work he wrote a comedy, *No más mostrador* (1831); an historical drama, *Macías* (1834); a novel, *El doncel de Don Enrique el Doliente* (1834); and an essay, *De 1830 á 1835, ó la España desde Fernando VII hasta Mendizábal* (1836). His complete works were published under the title *Obras completas de Figaro* (Madrid, 1837; Barcelona, 1884). Consult M. Chaves, *M. J. de Larra (Figaro) su tiempo, su vida, sus obras* (Seville, 1898). F. Piñeyro, *El romanticismo en España* (Paris, 1904). J. Nombela y Campos, *Larra (Figaro)* (Madrid, 1909), a work not finished.

LARRABEE, WILLIAM CLARK (1802-59). An American Methodist Episcopal minister and educator, born at Cape Elizabeth, Me. In 1831-35 he was principal of the Oneida Conference Seminary, Cazenovia, N. Y., and afterward occupied the same position in the Wesleyan School at Kent's Hill, Me., where he also assisted in the State Survey (1837). In 1840 he went to Ind., to teach mathematics and natural science in Indiana Asbury (later De Pauw) University, and he was State Superintendent of Public Instruction in 1852-54 and again in 1856. Though an ordained minister, he never took a pastoral charge, but concentrated his energy upon raising the educational standards of his own church, in which work he met with a great measure of success. He published: *Scientific Evidences of Natural and Revealed Religion* (1850); *Wesley and his Co-Laborers* (1851); *Asbury and his Co-Laborers* (1853); and a collection of the articles he had written for the *Ladies' Repository*, entitled *Rosabower* (1854).

LARRAMENDI, lăr'râ-mên'dê, MANUEL DE (born near the end of the seventeenth century, c 1690; died in the second half of the eighteenth century, various authorities giving 1750, 1766, and 1776 as the date). A Spanish Jesuit, one of the earliest students of the Basque language. Born at Andoain, the son of Domingo de Garagorri, he took his mother's name. He studied at Bilbao; was professor of theology at Valencia, at Valladolid, and at Salamanca; and

lived for some time at court as confessor of the Dowager Queen Maria Anna, widow of Charles II, but in 1733 retired to Loyola and spent the remainder of his life in study. His *Antigüedad y universalidad en España del vascoense* (1728) attempts to prove that all the dialects used in Spain are derived from the Basque; and he is quite as fanciful in the statement, in *El imposible vencido: arte de la lengua vascongada* (1729), that, although all other dialects are imperfect, the Basque is as it was when God made it. His other works are *Discurso histórico sobre la antigua y hermosa Cantabria* (1736) and *Diccionario trilingüe, castellano, vascoense y latino* (2 vols., 1745).

LARREY, lá'râ', DOMINIQUE JEAN, BABON (1766-1842). A French military surgeon, born at Baudéan, near Bagnères-de-Bigorre. He studied medicine with his uncle, Alexis Larrey, and later attended two hospitals, the Hôtel Dieu and the Hôtel des Invalides, after having served for a short time both in the army and in the navy. In 1792 Larrey was appointed second physician to the Hôtel des Invalides and in 1793 accompanied the French army to Germany and Spain, making at this time the important invention of the *ambulance volante*, or flying hospital, for transporting the wounded. Napoleon summoned him to Italy in 1797, after he had taught for a short time at Toulon and been a professor in the medicosurgical school at Val de Grâce. Larrey accompanied Napoleon's expedition in 1798 to Egypt. Later he was placed at the head of the medicosurgical department of the French army, and was created Baron of the Empire in 1810, receiving also a considerable pension. He was wounded and taken prisoner at Waterloo. At the Restoration he lost his rank and pension, though the latter was restored in 1818. Larrey continued to fill important offices till 1836. He was appointed inspector of military hospitals in Algeria and sailed for Africa May 15, 1842. Returning in a few months after completing the work assigned, he died at Lyons. Apart from his talent, skill, courage, and humanity, Larrey gained great scientific reputation. He published *Mémoires de médecine et de chirurgie militaire* (1812-18) and *Ouvrage chirurgical* (1829-36). Consult Werner, *Jean Dominique Larrey, ein Lebensbild* (Stuttgart, 1885).

L'ARRONGE, lá'rônzh', ADOLF (1838-1908). A German dramatist, theatrical manager, and musical conductor, born in Hamburg. He studied music at the conservatory in Leipzig, was kapellmeister successively in Cologne, Stuttgart, Budapest, and from 1866 to 1869 at Kroll's Opera House in Berlin. He then became editor of the *Berliner Gerichtszeitung* and, after attaining popularity as a playwright, became theatre director at Breslau (1874). Subsequently (1882), in association with Förster, Haase, Barnay, and Friedmann, he bought the Friedrich-Wilhelm-Indische Theater, which he managed as the Deutsches Theater. Among his best-known plays are *Mein Leopold* (1872); *Hasemanns Töchter* (1874); *Doktor Klaus* (1878); *Die Sorglosen* (1882); *Der Weg zum Herzen* (1885); *Pastor Brose* (1895); *Die Wohltätigen* (1901); *Sanatorium Siebenberg* (1903). Many are still given. He also wrote a tragedy, *Die Loreley* (1886), made an adaptation of the second part of Goethe's *Faust*, entitled *Fausts Tod* (1889), omitting the Helena scenes, and published *Deutsches Theater und*

deutsche Schauspielkunst (1896). His complete works were issued in 1908.

LARSEN, lâr'sên, KARL HALFDAN EDUARD (1860-). A Danish dramatist and novelist, born at Rendsborg. He studied law and political science at the University of Copenhagen and in Berlin. From 1883 to 1888 he lived abroad. His two dramas, *Kvinder* (1889) and *Ære* (1889), won him a name for keen psychological observation and descriptive power. There followed *Den brogede Bog* (1891), well-told stories, *Cirkler* (1893); *Lystfart* (1896); *Poetisk Tyskland* (1898); *Det skønne Portugal* (1904), travel sketches. In *Udenfor Rangklaserne* (1896), *Dansk Soldatersprog tillands og tilvands* (1895), *Kresjan Vesterbro* (1897), *Danske Mænd* (1898), he has presented the life, and especially in masterly manner the language, of Copenhagen's lower classes. Another drama, similar to his first two, was *Ej blot til Lyst* (1894). Other works are *Dr Iw* (1896), *En Kvinde's Skriftmaal* (1901), *De ensomme* (1903), *Japansk Aand* (1909), *Danske Nybyggere* (1910), *Det springende Punkt* (1911), and *De der drog hjemmefra* (1912). In 1900 he became editor of *Juleroser*. Consult C. E. Jensen, *Vore Dages Digtere* (Copenhagen, 1898).

LARSSON, lâr'sôn, CARL OLOF (1853-). A Swedish painter, illustrator, and etcher. He was born in Stockholm and studied at the academy there and afterward in Paris. Beginning as an illustrator, he became known for his witty drawings and grotesque caricatures, then he took up water-color painting, in which he developed a remarkable technique, applying the colors unusually wet. He rapidly gained popularity as a delineator of homely scenes, but in late years devoted himself chiefly to decorative painting. Larsson became known as a clever and precise draftsman; his extraordinary facility, fantastic and charming originality. His water colors are soft and delicate; his decorative paintings fresh, graceful, and effective in color. Among the best of the latter are the mural paintings in the Fürstenberg Gallery, Stockholm, and in the National Museum, Stockholm, representing "Gustavus Vasa's Entry into Stockholm, 1523." The illustrations for Rydberg's *Singoalla* are good examples of his imaginative work. Four albums, filled with sketches made near his home, contain his best work in the medium of water colors.

LARTIGUE, lâr'têg', JEAN (1791-1876). A French navigator and hydrographer, born at Vic-en-Bigorre. He made voyages (1820-24) to South America and the South Sea and in 1844 carried on important hydrographic investigations in the West Indies. After 1860 he was attached to the French navigation bureau. Among other works he published *Description de la côte du Pérou* (1842) and *Exposition du système des vents* (1840; 2d ed., 1855).

LARUN'DA. See ACCA LARENTIA

LARVA (Lat., ghost, mask, given to the caterpillar because it was thought by the ancients to mask the form of the perfect insect or butterfly). When animals become free from the parent tissue or from the egg, they either have the form, if not the size, of the adult, or they differ very markedly from the adults both in form and structure, and spend more or less time as free individuals before maturity is gained. The latter method of development we denominate larval, in contrast to the former,

which is foetal. Larval development may take place either slowly and by gradual stages, or by abrupt changes which we call metamorphosis (q.v.). The development of both the embryo and the larva is a series of ontogenetic recapitulations of stages or conditions which the animal has passed through in its phylogenetic history. Secondary changes may frequently have come in to complicate and obscure the phylogenetic inheritance. Such changes are brought about by variations in the larval, pupal, or adult stage, which prove of advantage to the organism and hence are perpetuated by inheritance. A certain kind of secondary change—viz., shortening of development—is more possible in foetal than in larval development. Many organs that must be retained in larval development, because useful for the individual during some stage in its free life, can be dropped altogether in the foetus, because it is so well protected within the maternal body. Possibilities of variations are, however, greater in larval than in foetal development. Indeed, larvæ, such as those of many insects, may exist with secondary characters only. This tendency to acquire secondary characters is in a measure held in check by the necessity of retaining ancestral organs which are functionally useful to the larva at some stage in its transformations.

In order to allow every organ in its development to repeat even in an abbreviated way its phylogenetic history, there is a tendency to put off the differentiation of the tissues into their definitive organs as long as possible. Thus, when an organ is hatched certain organs are as yet wholly undifferentiated, while certain others, such as muscles and nerves, are histologically differentiated. The shorter the larval period the earlier certain organs must appear, and this fact sometimes necessitates their development out of their phylogenetic order and hence obscures the ancestral history. Many of the secondary modifications which are produced in larvæ are for the purpose of adapting the larvæ to escape from their enemies, such as transparency, protective coloration, or netting organs, and many of the spinous processes on larval crustaceans and fishes. Most of the marine larvæ are free-swimming, and are well provided with organs of locomotion for the purpose of scattering the larvæ over a wide region and thus preventing undue crowding of the adults by enlarging their area of distribution.

Larval stages exist in the development of certain species in all the groups from Infusoria up to Amphibia. A number of these larvæ differ so much in form and habitat from the adult that their nature was often unsuspected by earlier observers, and they were given generic and specific names. This is the case with the zœæ of crabs, the alima, erichthus, and squillerichthus of the *Squilla*, the pilidium of certain Nemertinea (q.v.) (at first named *Pilidium gyrans*), the scolex of the tapeworm, and the axolotl stage of the *Amblystoma*. Some of the larval forms, such as those of diplopod myriapods, crustaceans, and chordates, have few or no affinities to other than their own groups. There are a goodly number of larvæ, such as the cercaria of trematodes, about which we cannot make statements as yet, and there are a great many larvæ that possess affinities with two or more groups. These stages or affinities we consider to be the representatives of a common

ancestry. Thus, the planula, with its simple double-layered and bilateral structure, is probably the ancestral form of the Cœlenterata. The common ancestor of the vertebrates seems to have been a hydra-like organism, double-layered, and with a central digestive cavity and with only one opening. In the ontogenetic development of vertebrates this stage is represented by the gastrula.

The larvæ of insects, to which at first the term alone referred, differ very much in the degree of their development, depending on the order to which they belong. Some are almost like the adult, except for the lack of wings, as in the case of the Orthoptera, and others are legless larvæ depending entirely for food on the provision made for them by their parent. The larvæ of beetles we call "grubs," those of flies "maggots," and of butterflies and moths "caterpillars." In general, the larvæ of insects may be divided into two types, the *campodeaform* of Brauer and the *cruciform* of Packard, the latter being applied to the more or less wormlike, secondary larvæ, such as caterpillars and the maggots of flies, and of ants, wasps, and bees. The campodeaform larva is so called from its resemblance to the stem form of insects, campodea, such are the nymphs of the white ant, dragon fly, ephemera, etc. Active and voracious larvæ store up little reserve material; but the forms that pupate, such as the grubs, maggots, and caterpillars, store up a large amount of fat. The larval forms of certain species of flies are capable of reproducing their kind before they have reached maturity in all other respects. See PARthenogenesis, *Pedogenesis*.

Bibliography. Fritz Müller, *Facts for Darwin* (London, 1869); Balfour, *Comparative Embryology* (ib., 1880-81), A. S. Packard, *Text-Book of Entomology* (New York, 1898); Mitchell, *The Childhood of Animals* (ib., 1912), with the writings of J. Müller, Brauer, Claus, De Geer, Dohrn, Réaumur, Lyonnnet, Faxon, Brooks, Riley, Hyatt, J. V. Thompson, and others.

LARVÆ. A term used by Romans originally of the souls of the dead, conceived of as flitting about at night. Later, the term was used of malevolent spirits, the spirits of those who died stained with crime, then of ghosts in general. The larvæ were represented in various hideous forms, or as skeletons, in which shape they appeared in the *Atellanæ* (q.v.).

LARVIK, lår'væk. A seaport of Norway. See LAURVIK.

LARYNGITIS (Neo-Lat., from Gk. λάρυγξ, *larynx*, larynx), or INFLAMMATION OF THE LARYNX. The usual catarrhal form may be either an acute or a chronic affection. In its milder form there is hoarseness, with discomfort or pain in the surrounding parts. This soon yields to warm inhalations and purgation. Acute laryngitis in its more severe form commences with a chill, which is followed by fever, with a strong pulse, a hot skin, and a flushed face. There are also soreness of the throat, hoarseness of the voice, great difficulty in swallowing, and a feeling of extreme constriction of the larynx. There is a painful stridulous cough, but only a little mucus is ejected. Great difficulty of breathing soon comes on, the act of inspiration being prolonged, with wheezing, in consequence of the swollen membrane of the glottis impeding the entrance of air. On examining the fauces the epiglottis (see LARYNX) is observed to be of a bright-red color, erect;

and so much swollen as not to be able to descend and close the glottis during deglutition. After an hour or two the symptoms subside and the patient falls asleep, breathing noisily. The trouble may recur during the night. In the morning the patient awakes apparently well, except for a cough.

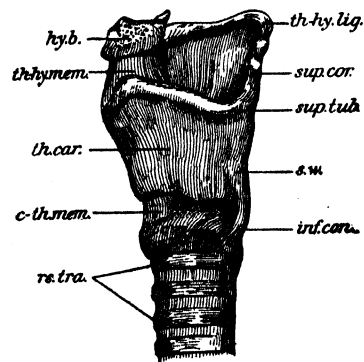
In very rare cases death results, after cyanosis of the face, drowsiness, delirium, and feeble, rapid pulse. In most cases the patient suffers every night until the disease disappears at the end of four or five days. The cause of acute laryngitis is exposure to cold, inhalation of dust or irritating gases, or swallowing corrosive liquids. Ipecacuanha, tartar emetic, and a little alcoholic stimulant afford quick relief in most cases. If suffocation appears imminent, intubation or tracheotomy must be employed. A cold pack to the throat, inhalations of warm steam, or of steam impregnated with compound tincture of benzoin, as well as internal administration of the bromides, give relief. Chronic laryngitis occurs in public speakers or singers from overuse of the vocal cords (generally in neurotics or those having imperfect nasal chambers), as well as in millers, masons, and others who habitually inhale dust. The constant drainage of diseased and irritating nasal or pharyngeal secretions into the larynx is responsible for a large number of cases of chronic laryngitis. Local applications of nitrate of silver and other astringents, as also change of climate, improve these cases. Another form is tubercular laryngitis; this occurs usually as a complication of pulmonary tuberculosis. The symptoms are hoarseness or complete loss of voice, pain in the throat, increased by coughing, speaking, or swallowing. Laryngoscopic examination reveals an unnatural pallor of the laryngeal mucous membrane and the presence of localized swellings or of small ulcers. The prognosis for recovery in this form is unfavorable. The treatment consists in local applications of lactic acid, solution of nitrate of silver, etc. For croupous laryngitis, see DIPHTHERIA.

LARYNGOSCOPE (from Gk. *λάρυγξ*, *larynx*, *larynx* + *σκοπεῖν*, *skopein*, to look). A small round mirror, mounted on a long handle, employed for the examination of the throat. The laryngoscope was invented in 1854 by Manuel Garcia (1805-1906), a vocalist and teacher of Paris and later of London. It was improved by Türek and Czermak. In order to use the laryngoscopic mirror a head mirror is necessary. The former is placed on a stalk attached to its margin, at an angle of from 120° to 150°, the stalk being about 6 inches in length and being composed of flexible metal, so that it can be bent at the will of the operator. The head mirror is a reflecting mirror, 4 to 6 inches in diameter, with a central opening through which the observer looks. It is attached by a stiffly working ball-and-socket joint to a band passing about the forehead. The rays from an electric light or from a good lamp are concentrated by means of this reflector on the laryngeal mirror, which is placed against the soft palate and uvula. The laryngeal mirror, introduced with the right hand, is maintained at such an inclination that it throws the light downward and illuminates the parts to be examined, while at the same time it reflects the images of the parts into the eye of the observer through the central opening of the reflector. By this means he can look through the larynx into the trachea

or windpipe. The tongue, covered with a handkerchief or with a small towel, is held lightly with the left hand and thus kept out of the way. By means of this instrument we can see the actual position of small tumors, ulcers, etc., and ascertain the color and condition of the mucous lining of the upper part of the respiratory tract. The same arrangement is also employed in examination of the posterior aspect of the nasal cavities, a smaller mirror being used, with its face turned upward.

LARYNGOTOMY (Gk. *λάρυγγοτομία*, *laryngotomia*, from *λάρυγξ*, *larynx*, *larynx* + *-τομία*, *-tomia*, a cutting, from *τέμνειν*, *temnein*, to cut). A medical term signifying the operation of cutting into the larynx (q.v.). This operation is performed in some cases of diphtheria by preference over tracheotomy (q.v.), when for special reasons the trachea is to be avoided. Laryngotracheotomy is the term applied to an incision made through the lower part of the laryngeal cartilages and extending down into the trachea. The incision in each case is made for the purpose of placing in position a tube through which the patient breathes while the glottis is closed by the disease.

LARYNX (Neo-Lat., from Gk. *λάρυγξ*, *larynx*, *larynx*). The organ of voice. It also takes a part in the respiratory process, as all air passing either to or from the lungs must pass through it. It is a complex piece of mechanism resembling a box composed of pieces of cartilage, which may be moved on each other, and inclosing the membranous bands (the *chordæ vocales*) by which the vocal vibrations are produced. It is situated between the *trachea*, or windpipe, and the base of the tongue, at the upper and front part of the neck, where it forms a considerable projection (especially in men) in the middle line; it opens superiorly into the *pharynx*, or throat, and inferiorly into the windpipe. The cartilages of which the skeleton of



SIDE VIEW OF THE CARTILAGES OF THE LARYNX.

hy.b., hyoid bone; *th.hy.mem.*, thyrohyoid membrane; *th.car.*, thyroid cartilage; *c.th.mem.*, cricothyroid membrane; *ra.tr.*, rings of trachea; *th.hy.lig.*, thyrohyoid ligament; *sup.cor.*, superior cornu; *sup.tub.*, superior tubercle; *a.w.*, surface of wing overlapped by inferior constrictor; *inf.con.*, inferior constrictor.

the larynx is composed are nine in number, viz., the thyroid and the cricoid cartilages, the epiglottis, the two arytenoid and the two cuneiform cartilages, and the two *cornicula laryngis*.

The *thyroid* (Gr., shieldlike) cartilage consists of two square plates of cartilage united in front at an acute angle, which forms the projection which is commonly known as the *pomum*

Adami, or Adam's apple. Each of these plates is prolonged at the upper and lower posterior corners. The thyroid cartilage forms almost the whole of the anterior and lateral walls of the larynx.

The *cricoid* (Gr., ringlike) cartilage is a ring whose lower margin is parallel to the first ring of the trachea, to which it is united by fibrous membrane. Its upper border is connected in front with the lower border of the thyroid cartilage by a thick yellow fibrous tissue. It presents two articular surfaces on either side, viz., a lower one, which articulates with the inferior cornua of the thyroid cartilage, and an upper one, which is oval in form and supports an arytenoid cartilage. The *arytenoid* (Gr., ladle-like) cartilages are pyramidal bodies resting on the oval articular surfaces at the upper and posterior part of the cricoid cartilage. When *in situ*, they present a concave posterior surface. From their connection with the vocal cords, and from their great mobility as compared with the two larger cartilages, the arytenoids play a very important part in the mechanism of the larynx. The *epiglottis* is a very flexible cartilaginous valve, situated at the base of the tongue and covering the opening of the larynx. Its direction is vertical, except during deglutition, when it becomes horizontal. It is attached inferiorly, by a kind of pedicle, to the angle of the thyroid cartilage. Upon removing the investing mucous membrane the cartilage is found to be perforated by numerous foramina. Each perforation admits some fasciculi of yellow, elastic, ligamentous tissue, which expands on its anterior aspect and secures the return of the epiglottis to its vertical position, independently of any muscular action. The *cornicula laryngis* are two small fibrocartilages which articulate with the apices of the arytenoids. The cuneiform cartilages lie on either side in the fold of mucous membrane extending from the epiglottis to the arytenoids. Such is the skeleton of the larynx which hangs from the hyoid bone, with which it is connected by means of the thyrohyoid ligament and certain muscles.

The various cartilages are connected one to another by ligaments, the chief of which are those known as the true and false vocal cords. In their quiescent state the true vocal cords do not lie parallel to each other, but converge from behind forward. The length of the vocal cords is greater in the adult male than in the adult female, in the ratio of three to two. In infancy they are very short and increase regularly from that period to the age of puberty. The mucous membrane of the larynx is part of the great respiratory tract (see MUCOUS MEMBRANE) and is remarkable for its great sensibility.

The length of the chink or aperture of the glottis, which is directed horizontally from before backward, varies, like the vocal cords, until the period of puberty, when its length in the male undergoes a sudden development, while in the female it remains stationary. In the adult male it is about 11 lines in length, a line being one-twelfth of an inch.

The larynx is provided with two sets of muscles; viz., the *extrinsic*, by which the whole organ is elevated or depressed, and the *intrinsic*, which regulate the movements of the various segments of the organ in relation to one another. By the action of these latter muscles, aided in some cases by the extrinsic muscles, the tension of the vocal cords may be increased or dimin-

ished, and the size of the opening of the glottis regulated at will.

The nerves of the larynx are derived from the superior and inferior laryngeal branches of the pneumogastric or vagus nerve. The superior branch is for the most part sensory (being mainly distributed to the mucous membrane), while the inferior branch communicates motor power to all the intrinsic muscles except the cricothyroid. See Cut in article BRONCHUS.

LARYNX, DISEASES OF THE. The most common disease of the larynx is *laryngitis* (q.v.) *Edema*, or *swelling of the glottis*, although of frequent occurrence in laryngitis, may be developed independently of inflammation, from obstruction of the veins leading from that part or from other causes. The symptoms are hoarseness and dyspnea. Tracheotomy (the operation of making an opening into the windpipe, into which a tube is passed) below the seat of the disease, or intubation, affords relief. *Chronic inflammation and ulceration of the larynx* may occur in tuberculosis and in secondary syphilis. In these cases the laryngeal affection is a local manifestation of a general disease.

LA SAGRA, RAMÓN DE. See SAGRA.

LA SALE, la'sal', ANTOINE DE (1398?-1461). The most important satirist and prose narrator in the fifteenth century. He wrote *Le petit Jehan de Saintré* (dated 1459), a romantic story of chivalrous love, yet with an undercurrent of satiric irony such as finds frank expression in *Les quinze joies de mariage*. He was a tutor of Jean of Anjou, the eldest son of René, and to this youth he dedicated *La salade* (written between 1437 and 1442). Several of the sketches are lively and dramatic, the characters are clearly defined, and the whole is a good specimen of early renescent literature and wit, though less important than La Sale's last work, the compilation of the *Cent nouvelles nouvelles*, gathered perhaps from the lips of Prince Louis (afterward King Louis XI of France) and his courtiers while they were refugees in Burgundy, though La Sale also drew on Poggio and Sacchetti. The tales are in part from old fabliaux, in part from Italian and Latin collections. La Sale's merit is in the treatment. There had been good French narrative prose before (Villehardouin, Joinville, Froissart), but La Sale took conscious delight in his art, and grew, as his work proceeded, in artistic sense and power. Most of the *Cent nouvelles nouvelles* have a frankness of speech that does not accord with the conventions of modern literary propriety, the humor is often cynical, the ethical tone low; but there is no snickering, as there is in the *Decamerone*, and though La Sale is far inferior as a stylist to Boccaccio, some of the *Cent nouvelles* are really polished. *Le petit Jehan de Saintré* was published (Guichard ed.) in 1843 and *Les cent nouvelles nouvelles* (Elzevir ed.) in 1858.

LA SALETTE, la sa'lét'. A famous place of pilgrimage in southern France, 21½ miles southeast of Grenoble. Here, on Sept. 19, 1846, the Virgin Mary is said to have appeared to a girl of 15 and a boy of 11. The story gave rise to a long and bitter controversy, but meantime a large church was built, and the place now has a reputation second only to that of Lourdes (q.v.). Consult: Rousselot, *Le vérité sur l'événement de La Salette* (Grenoble, 1848); De Toytot, *Voyage de Grenoble à La Salette* (ib., 1863); Bertrand, *La Salette* (Paris, 1889), against the truth of

the miracle, Donnadirn, *La Salette-Fallavaux* (Grenoble, 1852, 1853); Deléon and Cartellier, *La Salette devant le Pape* (ib., 1854).

LA SALLE, la sál'. A city in La Salle Co., Ill., 99 miles by rail southwest of Chicago, on the Illinois River, at the head of navigation, on the Illinois and Michigan Canal, and on the Chicago, Rock Island, and Pacific, the Chicago, Burlington, and Quincy, the Illinois Central, and other railroads (Map: Illinois, F 3). It is surrounded by fertile agricultural country and productive bituminous coal fields and is the centre of a large trade. There are several coal mines in operation in the city and the immediate vicinity, and the industries include also sheet-zinc smelting and rolling and the manufacture of ornamental pressed brick, common brick, hydraulic cement, Portland cement, sulphuric acid, plows, acid phosphate, nickeloid, sheet metal, tools, machinery, and alarm clocks. Besides coal, cement rock, silica sand, and fire clay are found in the vicinity. The city has a public library, a State mine-rescue station, and a fine bridge of the Illinois Central Railroad. Near here is Starved Rock, settled by the explorer La Salle. The government is vested in a city council and in a mayor, who appoints all subordinate officials excepting the clerk, attorney, and treasurer, who are chosen by popular vote. There are municipal water works. Pop., 1900, 10,446, 1910, 11,537. La Salle was settled in 1830 and named in honor of La Salle. It was chartered in 1852. Consult *History of La Salle County, Ill.* (2 vols., Chicago, 1886).

LA SALLE, JEAN BAPTISTE DE, SAINT (1651-1719). A French priest, the founder of the Brothers of the Christian Schools (q.v.). He was born at Rheims, April 30, 1651. In 1678, soon after his ordination to the priesthood, he was placed in charge of a congregation of teaching sisters. The impression he here gained of the need of good schools for the children of the masses led him a year later to gather around him the nucleus of a body of men devoted, as he was, to the cause of Christian education. In 1683 he resigned his canonry and in 1684, with 12 others, took vows of obedience and of perseverance, at least for three years. He was invited to Paris in 1688 by the curé of Saint-Sulpice, to build up a school in that parish. In 1691 he took a house at Vaugirard, near Paris, and made lifelong vows with two others. James II of England intrusted the education of 50 Irish boys of good family to him in 1698. A year later he established a technical school, which met every Sunday from 12 to 3 and soon numbered 300 members. In this, the first school of the kind in Europe, geography, geometry, building, drawing, and bookkeeping were taught, the session closing with religious instruction. In 1705 the novitiate was transferred from Vaugirard to Saint-Yon, near Rouen, where a large establishment was erected. The founder died at Boulogne in 1719, leaving 274 brothers, with nearly 10,000 pupils. He was beatified by Pius IX and canonized by Leo XIII, May 24, 1900. Some of his books have appeared in English: *The Rules of Christian Politeness* (Dublin, 1862); *Management of Christian Schools* (New York, 1893). Consult: J. Guibert, *Histoire de St. Jean Baptiste de La Salle* (Paris, 1901); J. B. Blain, *Vie de St. Jean Baptist de La Salle* (2 vols., Lille, 1901); F. Thompson, *Life and Labours of St. John de La Salle* (St. Louis, 1912).

LA SALLE, RENÉ ROBERT CAVELIER, SIEUR DE (1643-87). The discoverer of the Ohio and the first explorer of the greater part of the Mississippi River. He was a member of a wealthy merchant family of Rouen, but on becoming a Jesuit novice he lost the right of inheriting his father's fortune and in his twenty-fourth year emigrated to Canada, where the superior of the Seminary of St. Sulpice made him a grant of a large tract of land at the place now called Lachine, 8 or 9 miles above Montreal, on the St. Lawrence. His imagination was stirred by the tales of the Indians respecting a mighty river which they called the Ohio, which flowed into the sea at a distance of some eight months' journey. La Salle conceived that "the sea" could be no other than the long-sought Gulf of California, and that the northern water route to China was probably within his reach. He disclosed his views to Courcelles, the Governor of New France, and received letters patent authorizing his venture. In order to obtain the necessary funds, he sold his seigniory. He bought four canoes and hired 14 men, and was joined by another expedition under Dollier de Casson, which was fitted out by the seminary priests for the conversion of the Indians. The combined forces consisted of seven canoes and 24 men. They started up the St. Lawrence on July 6, 1669. They went through Lake Ontario, at the western end of which they met the explorer Joliet, returning to Canada. From him a map of the northern lakes was obtained, and with it such accounts of the spiritual destitution of the Indians in that region as determined Dollier to strike north and establish a mission.

La Salle separated from the missionaries and for the next two years devoted himself to explorations, of which we have only vague and unsatisfactory information. His maps and journals have disappeared, although it was asserted, as late as 1756, that they were in existence. It would seem that La Salle turned southeast from Lake Erie, reached a branch of the Ohio, and followed that river certainly as far as the Louisville Rapids, possibly to its junction with the Mississippi. Here his men deserted, and La Salle returned to Lake Erie alone. In 1671 he organized another expedition, respecting which we have no authentic and detailed information; passed up the Detroit River to Lake Huron; thence to Lake Michigan, and across the Chicago portage to the Illinois River, and may have descended this stream to the Mississippi. He returned to Montreal before 1673, when he laid before Count Frontenac his project for the exploration of the Mississippi. The Governor placed La Salle in command of a party sent to erect the new Fort Frontenac, near the present town of Kingston, on Lake Ontario. In 1674, and again in 1677, Frontenac sent La Salle to France, to push his fortunes at court. He was favorably received on both occasions, and on his first visit was granted the seigniory of Frontenac on condition that he reconstruct the fort of masonry and maintain it at his own charge, and on his second visit received a patent empowering him to pursue his discoveries at his own expense, on condition of completing them within five years, to build forts, and to monopolize the trade in buffalo skins. He raised funds and returned to Canada with 30 men and the equipment for another expedition.

Seventeen men under La Mothe Cadillac, and including the Franciscan Hennepin (q.v.), sailed

from Fort Frontenac in a little vessel of 10 tons on Nov. 18, 1678. They reached Niagara River on December 5 and began the construction of a palisade fort. They were joined by La Salle and Tonty on Jan. 8, 1679. The vessel was wrecked soon after, but the stores were saved, and the keel of a new vessel of 45 tons was soon laid at the mouth of Sayuga Creek, an affluent of the Niagara River. This was named the *Griffon*. La Salle returned to Fort Frontenac for supplies, and on Aug. 7, 1679, the voyagers set sail on Lake Erie for the great river. By September they had reached Green Bay (Lake Michigan). Here La Salle loaded the *Griffon* with furs and sent her back to the settlements. She was never again heard from. With four canoes and 14 men La Salle followed up the western shores of Lake Michigan, while his lieutenant, Tonty, with 20 men, took the eastern. The two finally met at the Miami, or St. Joseph River, at the southeast corner of the lake, where Fort Miami was built. The party started up the St. Joseph on Dec. 3, 1679, and crossed the portage to the Kankakee, a tributary of the Illinois River. Near the present town of Utica, Ill., they found an Indian village of 460 lodges. A little below Peoria Lake another Indian village was reached, and there La Salle heard circumstantial accounts of the efforts made by his enemies—both Jesuits and fur traders in Canada—to thwart his plans and even endanger his life. Several of the party deserted at this place. In January (1680) La Salle built a fortified camp, which he named Fort Crèvecoeur, and soon after began the construction of another vessel of 40 tons. Leaving Tonty in command of the fort, La Salle with four men and a guide started in March to return to Fort Frontenac for supplies. He arrived there in safety, in May, to find his supplies lost and the revenues plundered by dishonest agents. News followed him that Tonty's men had mutinied and deserted. La Salle at once organized another expedition and started in search of his friend. The Illinois country had suffered a terrible invasion of the Iroquois, and devastation met him everywhere. He reached the ruins of Fort Crèvecoeur and went down the Illinois to the Mississippi, finding no trace of Tonty, who had made his way down the western side of Lake Michigan to Green Bay.

La Salle returned to Fort Miami. He now exerted himself to form a league of the Western Indian tribes, under his own leadership, and thus to keep the Iroquois in check. The Indians received the idea with favor, and, after spending the spring of 1681 in negotiation, he returned in May to Fort Frontenac where he found Tonty, and thence to Fort Frontenac for supplies. Count Frontenac exerted his influence in behalf of the discoverer, and another expedition was equipped. In December La Salle crossed the Chicago portage to the Illinois, followed the frozen river on sledges to Lake Peoria, and from there floated downstream, reaching the Mississippi on Feb. 6, 1682. He kept on down the great river to the mouths of the Arkansas and Red rivers, where he took formal possession of the country in the name of his King. On April 6 the party reached the delta. There La Salle divided his men into three bands, and each took one of the branches which led to the Gulf. On April 9, 1682, they reunited, and La Salle erected at one of the mouths of the river a monument and a cross bearing the arms of

France, and proclaimed the river and all the lands drained by it to be by right of discovery the dominions of Louis XIV, King of France. To La Salle belongs the glory of tracing the great river for the first time from its upper waters to the sea, and of determining the connection between the discoveries of De Soto near its mouth and those of Joliet and Marquette in the north.

La Salle now formulated plans to establish colonies throughout this new-found country. Ascending the river in December, he built Fort St. Louis at Starved Rock, on the Illinois, as a rallying point for the Indians, 20,000 of whom established themselves in villages in the vicinity. It proved, however, impossible to obtain the necessary supplies from Canada. Frontenac had been succeeded by De la Barre, and La Salle was without a friend at court. The new Governor was a weak and avaricious man, who looked upon La Salle's monopolies and privileges as legitimate spoil. He seized Fort Frontenac and sent an officer to supersede La Salle at Fort St. Louis, ordering him at the same time to return to Quebec. La Salle obeyed and sailed at once for France. In Paris the discoverer and his plans for colonizing the West found favor at court. Royal letters were sent to De la Barre, commanding him to make restitution. Four vessels with about 400 men were placed at the disposal of La Salle, that he might make the voyage directly from France to the mouth of the Mississippi, and he was authorized to govern the country from Lake Michigan to the Gulf of Mexico. The fleet left La Rochelle July 24, 1684. The naval officer of the fleet, Captain Beaujeu, did not act harmoniously with La Salle, and the voyage was inauspicious from the outset. When at length the shore of the Gulf of Mexico was sighted, the expedition was unable to find the mouth of the Mississippi, amid the confusion of lagoons and inlets. La Salle knew its latitude, but had been unable to take its longitude. Mistakes were followed by recriminations. La Salle became convinced that Beaujeu was attempting to thwart his designs and finally established his men on shore, at Matagorda Bay, mistaking its inlets for the mouths of the Mississippi. Beaujeu sailed away on March 12, 1685, reaching La Rochelle about July 1. La Salle realized his mistake, established his colony on Lavaca River, and, leaving his lieutenant, Joutel, in charge, started (October, 1685) on a fruitless search for the Mississippi. In March, 1686, he was back again, and in April had started for Canada, but was obliged to turn back. His colony had dwindled from 180 to 45 men. Another attempt to reach Canada was made in January, 1687. The party wandered about for two months. Repeated quarrels led to a mutiny, and La Salle was treacherously shot from ambush. Joutel assumed the leadership of the few men who remained loyal and succeeded in reaching one of Tonty's posts on the Arkansas River. Little is known of the fate of those who took part in the mutiny, except that most of the men joined the roving troops of Indians, and two of them eventually made themselves known to Spanish exploring expeditions and returned to civilization by way of Mexico.

Bibliography. Shea, *Discovery and Exploration of the Mississippi Valley* (New York, 1852); Justin Winsor, *Cartier to Frontenac* (Boston, 1894); Abbott, *The Adventures of the Chevalier De La Salle and his Companions* (New

York, 1903); R. G. Thwaites, *France in America* (ib., 1906); Francis Parkman, "La Salle and the Discovery of the Great West," in *France and England in North America*, part iii (Boston, 1907). The original narratives are translated from the French, *Historical Collections of Louisiana* (New York, 1853), and Shea, *Early Voyages Up and Down the Mississippi* (Albany, 1861), and have been republished by the Caxton Club of Chicago. Consult also Pierre Margry, *Découvertes et établissements des Français dans l'ouest et dans le sud de l'Amérique septentrionale, 1614-1754; Mémoires et documents*, vol. ii (Paris, 1879), for a large number of other documents relating to La Salle.

LA SALLE COLLEGE. A Roman Catholic institution of higher learning, incorporated in 1863 as La Salle College in the city of Philadelphia. It is under the management of the Brothers of the Christian Schools and has collegiate, high-school, commercial, and preparatory departments, with a total enrollment in 1914 of about 240, of whom 85 were collegiate students. The instructors numbered 21, the library contained 10,325 books, and the value of the college grounds and buildings was \$250,000. The college confers the degrees of B.A., B.S., and M.A., besides honorary degrees given at the discretion of the faculty. The president in 1914 was Bro. D. Edward

LASAULX, la'zô', ERNST VON (1805-61). A German archaeologist. He was born at Coblenz, Germany. He studied at Bonn and Munich, was appointed professor at Würzburg in 1835, and nine years later was made professor of philology and æsthetics at Munich. His works have little scientific but some personal value, he was a mystic and was continually finding Christian ideas in Hellenic philosophy, parallels between Prometheus or Socrates and Christ. Among his books are: *Zur Geschichte und Philosophie der Ehe bei den Griechen* (1852), *Der Untergang des Hellenismus* (1854), *Neuer Versuch einer Philosophie der Geschichte* (1856), *Des Sokrates Leben* (1857). Consult Holland, *Erinnerungen an Ernst von Lasaulx* (Munich, 1861)

LA SAUSSAYE, là sô'sâ', PIERRE DANIEL CHANTEPIE DE (1848-). A Dutch scholar. He was born at Leeuwarden and in 1878 became professor of the history of religions in the University of Amsterdam; in 1900 professor of the theological encyclopædia. ethics, symbolics, and history of theology in Leyden. He is the author of *Lehrbuch der Religionsgeschichte* (2 vols., Freiburg, 1887-89; 2d ed., 1897; Eng. trans., *Manual of the Science of Religion*, London, 1891); *The Religion of the Teutons* (Eng. trans., Boston, 1902)

LASCA, lās'ká, IL. The name generally applied to the Italian poet Antonio Francesco Grazzini (qv).

LASCARIS, CONSTANTINE (c.1434-1501). A celebrated Greek grammarian, one of the founders of Greek studies in the West. He was a member of a noble Bithynian family, and was born at Constantinople. After the capture of Constantinople by the Turks (1453), he fled to Corfu and then to Italy, where he became tutor in Greek to Hippolita, daughter of Francesco Sforza, Duke of Milan. Later he taught at Rome (where he became an intimate friend of the learned Greek Cardinal Bessarion), at Naples, and at Messina. His Greek grammar, the so-called *Ἑρωδιάρια*, published at Milan in 1476, was the first Greek book ever printed. After his

death his valuable library was carried to Spain, where it is now preserved in the Escorial.—ANDREAS JOHANNES or JANUS LASCARIS (c.1445-1535), a brother or cousin of Constantine Lascaris, was also prominent as a missionary of Greek learning in the West. After studying at Padua he settled at the court of Lorenzo de' Medici and was sent by him to the East, where he acquired many manuscripts for the Medici Library, especially from Mount Athos. After the death of Lorenzo (1492) he was summoned to Paris by Charles VIII (1495). Here he taught Greek until 1513, when he was called to Rome by Leo X; but in 1518 he returned to France, as an Ambassador to Francis I, and helped to found the Royal Library. Later he resided for some time at Venice, until Paul III recalled him to Rome, where he remained until his death. He is to-day best known as the editor of five *editiones principes*, including a famous *Anthologia Epigrammatum Græcorum* (1494). Consult: Villemain, *Lascaris, ou les Grecs au XVème siècle* (Paris, 1825); Symonds, *Renaissance*, vol. ii (London, 1877); Väst, *De Vita et Operibus J. Lascaris* (Paris, 1878); Voigt, *Wiederbelebung des klassischen Altertums* (3d ed., Leipzig, 1893); Sandys, *A History of Classical Scholarship*, vol. ii (Cambridge, 1908)

LASCARIS, THEODORE I. Emperor of Nicæa (1206-22). During the siege of Constantinople by the Crusaders in 1204 he was active in the defense and probably was chosen as Emperor, but declined the office. After the capture of the city he went to Nicæa and established his power, first as despot, later as Emperor. He made extensive conquests and showed great ability. He was succeeded by his son John, who ruled for 32 or 33 years with great success and made himself loved by his people—John's son, THEODORE II, was Emperor for about four years, until 1258. He is usually described as degenerate, but of remarkable ability, which he showed in statesmanship and to a lesser degree in religious and scientific writings. His character is somewhat enigmatical, and the authorities differ with regard to many points. His heir was a child who was blinded and imprisoned by Michael Palæologus. Consult Gardner, *The Lascaris of Nicæa* (London, 1912)

LAS CASAS, lās kâ'sás, BARTOLOMÉ DE (1474-1566). A Spanish monk of the Dominican Order, known as the Apostle of the Indies. He was born in Seville of an old family which probably originated in France. He studied philosophy, theology, and jurisprudence at the old University of Salamanca and in 1502 went to Hispaniola, where he became a planter. At first he held Indian slaves, as did the rest of his countrymen. Though he was soon aroused by the powerful sermons of a Dominican monk, named Montesino, to some sense of the injustice thus inflicted on the natives, it was not until 1514, four years after he had been ordained priest (the first ordained in America), that he realized the full enormity of the system. He then released his slaves and began his long-continued crusade against Indian slavery. First he preached to the Spaniards about it, but his appeals fell on deaf ears; so in 1515 he returned to Spain to lay the case before the King. Soon after his arrival, however, Ferdinand died; his successor, afterward the Emperor Charles V, was absent in Flanders. Repulsed by the powerful Fonseca, Las Casas was contemplating a journey to Flanders when he was sympatheti-

cally received by the regents, Cardinal Ximenes and Adrian, who conferred upon him the title Universal Protector of the Indians. He then returned to the Indies; but his zeal and plain speaking soon stirred up against him active and powerful enemies, not only in the New World but also in Spain. Among the most formidable were Oviedo (qv) and Sepúlveda, an intimate of the King. Scarcely less troublesome than the openly declared enmity of powerful courtiers was the more secret opposition of the Jeronymite Order, several members of which were sent out with him in 1516 to aid in ameliorating the condition of the natives. Their efforts nullified his to such an extent that after only a few months Las Casas sailed again for Spain, where he gathered 50 picked men with whom he planned to found a new colony on the shores of the Caribbean Sea. It was during this visit to Spain that he made his unhappy concession to negro slavery. Believing that an increase in the numbers of negro slaves might result in the freeing of Indian captives, he advised that each colonist be allowed to import 12 negroes. It was not long, however, before he realized the terrible mistake he had made.

In 1520 he established his little colony at Cumana, on the Pearl Coast, the modern Venezuela, but soon afterward, during his absence in Hispaniola, it was destroyed by the Indians. Las Casas then retired to the Dominican convent in Hispaniola, where he remained for eight years, receiving the tonsure in 1522. It was here that he began to write his *Historia general de las Indias*. In 1531 he was in Mexico, and three years later in Nicaragua, where he did much to save the natives from the ferocity of the conquerors, and where he succeeded in converting the warlike people of Tuzulutlan, who had thrice defeated the Spanish forces. From 1539 to 1544 he was in Spain as adviser to the Council of the Indies. During this period he wrote his tracts *1cynte razones* and *Breussima relación de la destruycion de las Indias occidentales*, the first and most important of the series published at Seville in 1552-53, to which we owe most of our knowledge of Spanish misrule in the New World. He obtained from the Emperor, Charles V, the "New Laws," which absolutely forbade the enslavement of Indians. So drastic were these new laws that their promulgation led to an insurrection in Peru under the leadership of Gonzalo Pizarro, which might have resulted in the setting up of an independent kingdom, had not the Emperor modified them, besides choosing as his representative the able Pedro de la Gasca. However, much permanent good was accomplished, the system of encomiendas gave place again to the milder system of repartimientos, and abject slavery to something like European villeinage. In 1544 Las Casas was consecrated Bishop of Chiapa, a little see in Mexico, after having refused other and wealthier bishoprics. Three years later he returned to Spain, where he passed most of the remainder of his life in the quiet of the Dominican College of San Gregorio at Valladolid, engaged in the preparation of those works which finally opened the eyes of his countrymen to the enormity of their conduct towards the Indians. His *Historia general de las Indias*, a great source of information on the Spanish discoveries and conquests in the New World, was not printed until 1875 (Madrid, 5 vols.).

Bibliography. Arthur Helps, *The Spanish*

Conquest of America (London, 1861); id., *Life of Las Casas* (Philadelphia, 1868); Sabin, *Works of Las Casas* (New York, 1870); A. M. Fabié, "Vida y Escritos de Las Casas," in *Colección de Documentos inéditos para la Historia de España*, vol. lxx (Madrid, 1879); Justin Winsor, *Narrative and Critical History of America*, vol. ii (Boston, 1886); W. H. Prescott, *Conquest of Mexico* (Philadelphia, 1902); F. A. MacNutt, *Bartholomew de Las Casas* (New York, 1909).

LAS CASES, lās káz, EMMANUEL AUGUSTIN DIEUDONNÉ, MARQUIS DE (1766-1842). The companion and historian of Napoleon in St. Helena. He was born in the château of Las Cases, near Revel, in Languedoc; was a lieutenant in the navy before the Revolution, served in the Prince of Condé's army (1792); spent some time in England, where he supported himself by private teaching, and took part in the expedition to Quiberon (1795). After Napoleon's accession to power he returned to France and labored in the preparation of his admirable *Atlas historique*, which was published under the name of Lesage (1803-04). Napoleon made him Baron, employed him in offices connected with the home administration, and gave him the office of chamberlain. After the battle of Waterloo Las Cases offered to share the exile of Napoleon, and in St. Helena the ex-Emperor dictated to him a part of his memoirs. A letter which Las Cases contrived to send to Lucien Bonaparte led to his being arrested by the British authorities and separated from Napoleon in 1816. He returned to Europe and resided till Napoleon's death at Frankfort-on-the-Main and in Belgium, where he wrote his memoirs, *Mémoires de E. A. D. Comte de las Cases* (Brussels, 1818). He then returned to France and published the *Mémorial de Sainte Hélène* (1823). After the July revolution he entered the Chamber of Deputies as a member of the Extreme Left. Consult Grille et Musset-Pathay, *La Suite au mémorial* (Paris, 1824).—His son, EMMANUEL PONS DIEUDONNÉ (1800-54), acted as secretary to Napoleon I at St. Helena and was deported from there with his father. When, after the death of Napoleon, the Governor of St. Helena, Hudson Low (qv), returned to London, Dieudonné attacked him with a horsewhip and was compelled to leave England. A later attempt to murder Las Cases was connected by some with this episode. In 1830 he participated as a Constitutionalist in the July revolution and was a member of the Chamber of Deputies until 1848. He left an account of his voyage with the Prince de Joinville in 1840 to bring back the remains of Napoleon I, *Journal écrit à bord de la frigate, la Belle Poule* (Paris, 1844). In 1852 he was made a senator by Napoleon III.

LASCO, lās'kō, JOHANNES A. See ALASCO.

LAS CRUCES, lās krō'sēs. A city and the county seat of Dona Ana Co., N. Mex., on the Rio Grande, opposite Mesilla, 44 miles north-northwest of El Paso, Tex., on the Atchison, Topeka, and Santa Fe Railroad (Map: New Mexico, C 6). It is the seat of the State College of Agriculture and Mechanics Arts. The city is situated in a region having fruit-growing, farming, and silver, copper, lead, and zinc-mining interests; and there are canning factories, wineries, and concentrating works. This district is included in the Elephant Butte Dam irrigation project. (See DAMS AND RESERVOIRS.) Las Cruces owns its water works. Pop., 1910, 3386.

LASCY, lăs'ă, or **LACY**, FRANZ MORITZ, COUNT (1725-1801). An Austrian general, son of Count Peter Lacy (1678-1751), an Irishman in the Russian service. He was born at St. Petersburg, was educated for the army in Vienna, and in 1743 entered the Austrian service. He fought bravely in Italy, Silesia, and the Netherlands, was promoted to major general for his bravery at Lobositz, and, with the rank of major general commanding a division, undertook the reorganization of the army in 1758. His strategy during the years 1759 and 1761 won him in 1762 the rank of field marshal. In 1766-73 he was the head of the military advisory board. He was unsuccessful in the war with Turkey (1788-90) and was retired.

LA SERENA, là sâ-ră'nă. The capital of the Department of Coquimbo, Chile. It is situated on an eminence overlooking a small bay of the Pacific Ocean, 215 miles north of the city of Valparaíso (Map: Chile, E 3). It has a delightful climate, is surrounded by gardens, and is a well-built and handsome town, with straight and regular streets, several plazas, and promenades. A railroad 8 miles long connects it with its port, Coquimbo (q.v.). Other railroads run to the interior towns of Vicuña and Rivadavia, and a line running southward, but not yet completed, will connect it with Valparaíso and Santiago. It is the seat of a bishopric and of a Court of Appeals. Pop., 1895, 16,561; 1907, 15,996.

LA SERNA Y DE HINOJOSA, là sâr'nă ă dă ă'nô-hô'să, JOSÉ DE (1770-1832). A Spanish general and viceroy, born at Jerez de la Frontera. He fought against the French in the Peninsular War and served under Wellington in 1813. Having been promoted to the rank of field marshal in 1815, he was in 1816 placed in command of the Royalist army in Upper Peru, with the rank of commander in chief. The Viceroy, Pezuela, was from the first antagonistic; and La Serna, after several times acting against his own judgment, notably in the battles of Salta and Jujuy, where the patriots were victorious, was persuaded to remain at his post only by the prospect of San Martín's invasion. He then received command of the army and also the title of Viceroy in Pezuela's place (1821). After San Martín entered Lima, La Serna retreated to Cuzco, where he maintained his army against the patriots for three years without assistance from Spain. On Dec. 9, 1824, the decisive battle of Ayacucho was fought between General Sucre, the patriot leader, and the Viceroy. Despite the Royalist odds, the patriots won the battle, and La Serna was wounded and captured. He was afterward released, and returned to Spain in 1825. In 1824 he had been advanced to the rank of lieutenant general, and on his return to Spain his grateful sovereign rewarded his devotion and his services in South America by creating him Count of the Andes. Among other decorations and knighthoods there were bestowed upon him the grand crosses of San Fernando, San Hermenegildo, and Isabel la Católica. He was the last and the most patriotic and illustrious Viceroy of Peru.

LASHKAR. See GWALIOR

LASTOPYGIDÆ, là'si-ô-pîj'î-dă. The name of a family of Old World Primates recently considered as replacing the name Cercopithecidæ (q.v.).

LA SIZERANNE, là sâz-rân', MAURICE DE (1857-). A French philanthropist, born at

Tain (Drôme), a brother of Robert de la Sizeranne. Becoming blind himself when nine years old, he devoted his whole life to benefiting those unfortunate in the same way. He was educated at the Jeunes Aveugles in Paris, was made a professor there, and afterward developed the abbreviated orthography for the blind now in use in France. La Sizeranne was made a Chevalier of the Legion of Honor and filled several high offices in societies. In 1883 he founded *La Revue Braille*, later the Braille Library, he compiled a bibliography of books especially printed for the blind; and wrote himself. *Les aveugles utiles* (1881); *Jean Guadet et les aveugles* (1886); *Les aveugles par un aveugle* (1888; 5th ed., 1912; Eng. trans. by F. Park Lewis, *The Blind as Seen through Blind Eyes*, 1893); *Deux ans d'études et de propagande en faveur des aveugles* (1890; new series, *Études et propagande en faveur des aveugles*, 1899); *Mes notes sur les aveugles* (1895); *Les sœurs aveugles* (1901, Eng. trans. by L. M. Leggatt, *The Blind Sisters of St. Paul*, 1907), *Impressions et souvenirs* (1904), *La question des aveugles* (1911).

LA SIZERANNE, ROBERT DE (1866-). A French writer, especially on art. A brother of Maurice de la Sizeranne, he was born at Tain (Drôme), was educated at the Collège de Vauguard, Paris, then studied law, and was admitted to the bar (cour d'appel) in 1895. He devoted himself to the study of art, and particularly English art, contributing to the *Revue des Deux Mondes* and the *Revue Encyclopédique*. For his writings as a whole he received the Vitet prize of the French Academy in 1909, and his *La peinture anglaise contemporaine* (Eng. trans. by H. M. Poynter, *English Contemporary Art*, 1898) had been crowned by the Academy in 1895. Other works include *La référendum communal* (1893); *Ruskin et la religion de la beauté* (1897, Eng. trans. by the Countess of Galloway, *Ruskin and the Religion of Beauty*, 1899); *La photographie, est-elle une art?* (1899); *Le miroir de la vie* (1902; 2d series, 1909); *Les questions esthétiques contemporaines* (1904). In 1908 he published *Pages choisies de Ruskin*.

LASK. A town in the government of Piotrkow, Russian Poland, 20 miles southwest of Lodz on the Nowolka River. It is on the Warsaw-Kalisz Railroad and is an important cloth manufacturing centre. Population, 1897, 4439. Lask was the scene of exceedingly heavy fighting during the European War of 1914, in the battles around Lodz. See WAR IN EUROPE.

LASKER, lăs'kër, EDUARD (1829-84). A Prussian statesman of Jewish descent, born at Jarotschin (Posen). He was educated at the universities of Breslau and Berlin and in 1851 obtained a post in the Berlin municipal court. Subsequently he spent three years in England in the study of public affairs. Upon his return in 1856, he again entered the government service of Prussia. In 1865 he was first elected to the Lower House, where in 1868-73 he represented Magdeburg and in 1875-79 Frankfort-on-the-Main. He sat for the first electoral district of Berlin in the Constituent North German Diet, and later, until his death, in the North German and the German Diet for the second electoral district of Sax-Meiningen. He was identified with the Fortschrittliche or Progressives, until 1866, when he assisted in founding the National Liberal party. (See POLITICAL PARTIES, Germany.) In the civil consolidation of the German Empire Lasker played a very con-

spicuous part, and he largely shared many of the most important legislative and administrative enactments. Differences ultimately arose between Bismarck and himself, and at last the Chancellor's economic and tax-reform policy led him to withdraw from the National Liberal party. He was soon joined by others, and the "secessionist" faction thus formed constituted a vigorous opposition. In the hope of benefiting his health Lasker visited the United States in 1883. His death in New York, Jan. 5, 1884, was followed by what is known as the "Lasker incident." Resolutions of condolence, passed by the House of Representatives of the United States, were forwarded to Minister Sargent at Berlin, to be by him transmitted through the legitimate channel to the Reichstag. These resolutions were returned undelivered by Bismarck, through the German Minister at Washington. Lasker's chief publication was *Zur Verfassungsgeschichte Preussens* (1874), a collection of essays. Consult Bamberger, *Eduard Lasker* (Leipzig, 1884).

LASKER, EMANUEL (1868-). A German chess player and mathematician, born at Berlinchen, Prussia. He was educated at Berlin, Gottingen, and Heidelberg, and made a special study of mathematics in 1888-91 and in 1896-97. His first noteworthy chess playing was in 1880, when he won first prize in the Breslau Hauptturnier. He won second prize in the Amsterdam tournament of 1889, and in the following year won matches with Mieses and Bardeleben and prizes at the tournaments held in Graz and Berlin. In 1892 the first honors of the London national tournament were his, and, after winning the English championship by defeating the well-known expert Blackburn, he visited the United States, where he met most of the leading players and won the American championship from Showalter. On May 24, 1894, he won the championship of the world by defeating the veteran Steinitz. His other successes were at the Hastings tournament in 1895, the St. Petersburg tournament in 1896, and the tournaments of Nuremberg (1896), London (1899), and Paris (1900). The match between Lasker and the Russian Rubinstein, scheduled for August, 1914, was canceled because of the European War. In 1902 he acted as assistant lecturer in mathematics at Victoria University, Manchester, England. Lasker published a collection of letters under the title *Common Sense in Chess* (1896), contributed to the proceedings of various mathematical societies, and in 1904 founded *Lasker's Chess Magazine*. He was given the degree of Phil.D. by the University of Erlangen in 1900.

LASKI, lās'kē, JAN. See ALASCO, JOHANNES.

LASO DE LA VEGA, lās'ō dā lā vā'gā, GAROI (1503-36). A Spanish soldier and poet. He was born at Toledo and early adopted the profession of arms. He gained a distinguished reputation for bravery in the wars carried on by the Emperor Charles V against the French and Turks, but was mortally wounded while storming a castle near Fréjus, in the south of France, and died at Nice. Laso, though prematurely cut off, lived long enough to win immortality by the part which he played, in conjunction with his friend Boscán, in revolutionizing the national poetic taste of his countrymen. Like Boscán, he imitated the Italian poetical manner and substituted Italian verse forms for the older national measures, which he used in only very few cases. His eclogues, it should be said, show

also a Vergilian influence. His pieces consist of only 37 sonnets, five canzones, two elegies, one epistle, and three pastorals. Singular to say, they do not contain a trace of military ardor, but are inspired by a tender sweetness and melancholy which appear to have deeply affected his countrymen. Laso's poems were first published in 1543, in an edition of Boscán's works. They are most accessible in the collection of Spanish masterpieces called the *Biblioteca de autores españoles*, vols. xxxii and xlii (cf. Wiffen's Eng. trans., published in 1823). For the best account of his life, consult Fernández de Navarrete, in Salvá y Sainz de Baranda, *Documentos inéditos para la historia de España*, vol. xvi (Madrid, 1850). See also A. M. Huntington's facsimile reproduction of the (Lisbon) edition of 1628 of his *Obras* (New York, 1903) and the bibliography in James Fitzmaurice-Kelly, *Bibliographie de l'Histoire de la Littérature Espagnole* (Paris, 1913).

LASO DE LA VEGA (EL INCA), GAROI (c.1540-1616). A Peruvian historian, known as "the Inca." He was the son of one of the Spanish Conquistadores and grew up amid the civil turmoil of the early years of Spanish rule in Peru. He became familiar with the men and events of the time, so that his history has all the flavor of actuality. At his home he met relatives of his mother, an Inca princess, who told him much of the history of his family and of the land over which they had ruled. After his father's death Laso decided to go to Spain. He entered the army as a captain and served against the Moriscos. Becoming involved in debt, he retired from the military service and entered on a literary career. He translated Abarbanel's *Dialogues of Love* from the Italian, published in 1590, which was soon placed on the Index, and then turned his attention to history. From an old soldier, a companion of De Soto, he learned the story of the conquest of Florida, which he wrote out in a bombastic literary style, *La Florida del Ynca* (1605). Meanwhile he had gathered from his early schoolmates their recollections of early days in Peru, and by combining these with his own memories, especially of what he had heard from his mother's people, he prepared the *Royal Commentaries of Peru*, a work of prime importance, filled with interesting detail and in the main authoritative, despite a certain exuberance of fancy. It is of special value to folklorists. The first part was published in 1609, and the second in 1617, a year after the author's death, which took place at Cordova, where he had passed the latter half of his life. The *Commentaries* have been translated, with notes and an introduction by Markham, and published by the Hakluyt Society (London, 1869).

LAS PALMAS, lās pāl'más. The capital of the island of Grand Canary, the largest city of the Canary Islands, and until 1833 the capital of the entire archipelago (Map: Spain, G 5). It is beautifully situated on the northeast shore of the island in a fertile valley dotted with palms. It has a magnificent harbor, capacious and deep enough for the largest ships, sheltered by the peninsula called La Isleta. Enormous amounts of coal are stored here, and the tonnage passing through this harbor exceeds that of any other Spanish port. There is regular steamship communication with the west coast of Africa, the Cape, Australia, New Zealand, and America, besides European ports. The port, which bears

the name of La Luz, and which is protected by two forts and several batteries, is connected by railroad with the city itself, which lies 4 miles to the south. Las Palmas proper is built on two sides of a stream. Though the streets in the older portion are narrow and irregular, the new quarters are largely of well-built two-story houses. The cathedral, which was begun in the sixteenth century and finished at the beginning of the nineteenth, has a handsome Ionic façade. There are several other churches, a large city hall, an episcopal palace, a college and seminary, a library, an art academy, an atheneum and museum, and a large theatre, seating 1400 persons. Fishing is still one of the chief occupations of the inhabitants, but the city is rapidly developing and is becoming the principal industry. There are also manufactures of glass, leather goods, and hats, and a famous brand of wine is exported. Pop., 1887, 21,018, 1900, 44,517; 1910, 62,886. Las Palmas is said to have been founded in 1478 by Juan Rejon at the time of his conquest of the island.

LASSA. The capital of Tibet. See LIASA.

LASSALLE, la'säl', FERDINAND (1825-64). A celebrated Socialistic agitator, born at Breslau in 1825. His father, a Jewish silk merchant, planned a commercial career for him and sent him at 16 to the commercial high school at Leipzig. But Lassalle conceived an antipathy for trade, left the college after two years, and entered upon philosophical, philological, and archaeological studies at Breslau and Berlin. His extraordinary brilliancy won him many admirers at the university, among them Alexander von Humboldt. At the university he began a philosophical work on Heraclitus the Obscure, but, becoming interested in the case of the misused wife of Count von Hatzfeldt, he spent his best energies for eight years in conducting her suit for separation and won a brilliant victory. *Die Philosophie Herakleitos des Dunkeln* appeared in 1858 and was received with great favor in Berlin. In 1861 Lassalle published *Das System der erworbenen Rechte*, pronounced by Savigny to be the ablest legal work written since the sixteenth century.

As early as 1848 Lassalle had become a radical disciple of Marx. In that year he was arrested for his bold denunciations of the reactionary party and after a long trial was condemned to six months' imprisonment. In 1862 he broke with the Progressists (Fortschrittspartei) and appeared as the champion of the working classes. He published several pamphlets, the circulation of which was prohibited. Nevertheless, copies of them were widely circulated and created a general interest in Socialism among the working classes. His main theory was that there was no satisfactory prospect for the working classes under the wage system. He proposed to found cooperative associations for production, employing public credit to secure capital. In 1863 he founded *Der allgemeine deutsche Arbeiterverein*, the object of which was to secure to the workers political power, to be employed for the overthrow of the existing economic order. While the society was still in its infancy, Lassalle was killed in a duel, the result of a love affair. Lassalle must be regarded as the virtual founder of the German Social Democratic party, although the present leaders of the party repudiate his ideas as antiquated.

Lassalle's Socialistic writings added practically nothing to the teaching of Marx, but his learn-

ing and eloquence and his fascinating personality gave the labor movement a powerful impulse. Modern Socialism as a political movement owes more to Lassalle than to any other man. The best edition of Lassalle's works is that of Bernstein, *Ferdinand Lassalles Reden und Schriften* (3 vols., Berlin, 1892-93), which includes a biography. A new edition of his *Gesamttwerke* is by Blum, vols. i-xiv. Several volumes of Lassalle's letters have been published: to Hans von Bülow, 1862-64 (Dresden, 1885); to Karl Rodbertus (Berlin, 1878), to Georg Herwegh (Zürich, 1896); to Karl Marx and Friedrich Engel (Stuttgart, 1902).

Bibliography. Aaberg, *Ferdinand Lassalle* (Leipzig, 1883); Ely, *French and German Socialism* (New York, 1883); Bernstein, *Lassalle as a Social Reformer* (London, 1893); Kohut, *Ferdinand Lassalle* (Leipzig, 1899); Brandes, *Ferdinand Lassalle* (London, 1911); Hermann Oncken, "Lassalle," in *Politiker und Nationalökonomien*, vol. ii (2d ed., Stuttgart, 1911), containing a bibliography; Karl Lautmann, *Ueber Ferdinand Lassalle und sein Verhältnis zur Fichteschen Sozialphilosophie* (Jena, 1913), containing a bibliography.

LASSAR, la'sär', OSKAR (1849-1907). A German dermatologist. Born at Hamburg, he studied at Heidelberg, Göttingen, Strasbourg, and Berlin, where he established a private clinical hospital for the treatment of skin diseases. In 1893 he was appointed professor of dermatology at the University of Berlin. He became known for his investigations of parasitic diseases of the hair, was one of the first to use Roentgen rays to examine cancerous growths, and was successful in the symptomatic treatment of skin diseases. He promoted also the regulation of the sanitary condition of public baths. His extensive collection of pathological plaster casts was bequeathed to the Kaiserin Friedrich Haus, Berlin. After 1893 he was editor of the *Dermatologische Zeitschrift*.

LASSBERG, la'sbërk, JOSEPH, BARON (1770-1855). A German antiquary, born at Donaueschingen. In 1817 he gave up the office of Privy Councillor to the Prince of Furstenberg, which he had held since 1806, and devoted himself to the study of older German literature. At the castle of Meersburg, on Lake Constance, he collected a valuable library, after his death incorporated in the library at his birthplace. His collection of manuscripts is famed as containing one of the three most important codices of the Nibelungenlied. Lassberg edited, under the name Meister Sepp von Eppishusen, *Ein schon und anmutig Gedicht, der Littover* (1826), *Sigenot* (1830), *EGgenheld* (1832), *Ein schön alt Lied von Grave Fritz von Zolre* (1842), and the collection called *Liedersaal* (4 vols., 1820-25). Consult Franz Pfeiffer (ed.), *Briefwechsel zwischen Lassberg und Uhl-land* (Vienna, 1870).

LASSELL, WILLIAM (1799-1880). An English astronomer, born at Bolton, Lancashire. He had very little opportunity for schooling, and it was during his mercantile apprenticeship at Liverpool that he made his own telescopes, and afterward he built a private observatory near that city. He not only built and mounted reflecting telescopes equatorially, which were the first of the kind to be used, but invented an excellent method of polishing the specula. With a 2-foot reflector of his own construction he discovered the satellite of Neptune in 1847, and two

new satellites of Uranus in 1851. He also detected Hyperion, the eighth satellite of Saturn, almost simultaneously with Bond in 1848. In 1861 he mounted equatorially a reflecting telescope at Valletta on the island of Malta and remained there four years observing and describing new nebulae and perfecting the results of many of his first observations. He returned to England in 1865 and established an observatory near Maidenhead, where he remained until his death. He served as president of the Royal Astronomical Society in 1870-72.

LASSEN, läs'sen, CHRISTIAN (1800-76). An eminent Norwegian Orientalist. He was born at Bergen, Norway, studied at Christiania and afterward (1822) at Hildesheim and Bonn, and assisted Schlegel in the publication of the *Ramayana* and *Hitopadesa*. He was also associated with Eugène Burnouf in the production of the *Essai sur le Pali* (1826). In 1830 he became extraordinary, and in 1840 full, professor of ancient Indian languages and literature at Bonn. In 1870 he gave a large part of his library to the University of Christiania. He died at Bonn. Lassen edited many Sanskrit works and published several very important works, the chief of which are: *Die altpersischen Keilschriften* (1836), *Vollständige Zusammenstellung aller bis 1845 bekannt gemachten altpersischen Keilschriften mit Füllraum* embodying Westergaard's investigations (1845), *Beiträge zur Geschichte der griechischen und indo-scythischen Könige in Bactrien, Kabul und Indien* (1838), *Institutiones Linguae Pracriticae* (1837), *Gita Govinda Jayadeva* (1836); *Anthologia Sanscritica* (1838, new ed. by Gildemeister, 1865 and 1868), *Indische Altertumskunde*, his principal work, a monumental critical history of Indian civilization (1847-61; 2d ed. of vols. i and ii, 1867-74). Consult *Allgemeine Deutsche Biographie*, vol. xvii (Leipzig, 1883), and *Norsk Forfatter-Lexikon*, vol. iii (Christiania, 1892).

LASSEN, EDUARD (1830-1904) A German composer, born at Copenhagen. His parents moved to Brussels when he was but an infant, and at 10 years of age he was registered as a student in the conservatory of that city, winning all the important prizes as well as the Grand Prix de Rome. He became court music director at Weimar in 1858, and through the influence of Liszt was enabled to give his opera *Landgraf Ludwigs Brautfahrt* (1857). He was court kapellmeister at Weimar from 1861 to 1895, during which time he successfully produced Wagner's *Tristan und Isolde* (1874), besides the following operas of his own: *Frauentöb* (1860), *Le captif* (1865); and a ballet, *Diana*. He also wrote music to *Œdipus in Kolonus* (1874), to *Faust* (1876), to *Pandora*, to Hebbel's *Nibelungen*, and very many popular songs.

LASSEN PEAK. A volcanic peak in northern California in the southern end of the Cascade Range, about 135 miles north of Sacramento (Map: California, D 2). Its ancient lavas reach the Sacramento valley on the south and on the northeast join the great Columbia lava beds. While indications of volcanic energy have been displayed in the numerous hot springs and boiling mud lakes near the base, Lassen itself has been quiescent until 1914, when eruption and outbursts of steam began and actively increased, inflicting little damage.

LASSERRE, là'sâr', PAUL JOSEPH HENRI DE MONZIE- (1828-1900). A French writer on religious subjects, born at Carlux. He studied law at Paris until 1851 and in that year wrote, in favor of the coup d'état, *L'Opinion et le coup d'état*. He took up the cause of Poland, traveled to Rome in her behalf, and helped gain the Pope's condemnation of the massacres of Warsaw. A few years later he made himself famous by his attack on Renan's *Vie de Jésus*; by his claim that he had been healed at Lourdes, his consequent literary activity in favor of the pilgrimages thither, and his quarrels with Zola over the question, and by his translation of the Gospels, which, under the title of *Saints Evangeliques* (1887), was first highly praised by the Vatican, but later put on the Index Expurgatorius. His great successes were *Notre-Dame de Lourdes* (1863), which has been translated into most of the European languages, and *Les épisodes miraculeux de Lourdes* (1883). In English these are to be had as *Our Lady of Lourdes* and *History of the Miraculous Sanctuary of Our Lady of Lourdes*. Lasserre wrote also *De la réforme et de l'organisation normale du suffrage universel* (1873).

LAS'SO (Portug. laço, Sp. lazo, snare, from Lat. *laqueus*, snare, probably from *lacere*, to allure). A rope of braided rawhide, braided linen, or twisted hemp, with a running noose at one end. The noose is usually protected by running through a brass or rawhide ring called a *hondo*. The length of the lasso varies with the locality; working in corrals and steep brush-clad mountains ropes as short as 40 feet are used, while in open and level country a length of 100 feet is occasionally found. It is thrown, mostly from horseback, with a whirl which takes the expanded noose over the horns or legs of the animal to be captured. It was in use in South America and Mexico before their discovery by the Spaniards and is still used for catching wild horses on the Pampas. It is an essential part of the outfit of the American cowboys, many of whom become astonishingly expert in its use. This was most conclusively demonstrated in 1910, when Col. Charles J. Jones ("Buffalo" Jones), an American plainsman, Marshall Loveless and Ambrose Means, American cowboys, went to Africa and actually "roped" not only the fleetest of the wild animals, but some of the most dangerous, including a rhinoceros and a lioness. Consult Scull, *Lassoing Wild Animals in Africa* (New York, 1911).

LASSO, läs'sò, ORLANDO DI (ORLANDUS LASSUS) (1532-94). A celebrated composer, born at Mons in Hainault. After having been a choir boy in the church of St. Nicholas at Mons, he was taken, as a protégé of the Viceroy of Sicily, to Sicily and Milan, where he remained till about 1550. In 1555 we find him at Antwerp; in 1557 he went to Munich on the invitation of Duke Albert V of Bavaria, and, after being identified with the court chapel, became in 1563 the *maestro di cappella*. This post he retained till his death. Lasso was the forerunner of Palestrina. At first he wrote madrigals and songs in the style of Marenzio and Vicentino, but he soon devoted his attention to sacred compositions, and it is upon these that his reputation rests. Although he wrote in the strict contrapuntal and imitative style of his predecessors, he led his voices in such a way as to obtain massive harmonic effects.

His best work, the *Penitential Psalms of David* (republished in modern notation by Dehn, 1828), compares favorably with the works of his greater contemporary, and his influence on church music of his day was scarcely less than Palestrina's. Without exception he is the most fertile composer known in the history of music, the number of his works exceeding 2000. In 1894 Breitkopf and Härtel began a complete edition of his works (under the editorship of F. X. Haberl and A. Sandberger) in 60 volumes, of which so far 20 have appeared. Consult Adolf Sandberger, *Beiträge zur Geschichte der bayerischen Musikcapelle unter O. di Lasso* (3 vols., Leipzig, 1894), and Jules Declève, *Roland de Lassus, sa vie et ses œuvres* (Mons, 1894).

L'ASSOMPTION, lă'sôn'syôn'. A town and the capital of L'Assomption Co., Quebec, Canada, on the Canada Northern Railway, 22 miles north by east (direct) of Montreal (Map: Quebec, E 5). It is the seat of L'Assomption College and has a Roman Catholic convent and a hospital. Its industrial establishments include three molding factories, a foundry, a cigar factory, a tobacco factory, two carriage and four butter factories. Native wine is also made. Pop., 1901, 1605; 1911, 1747.

LASSON, lă'sôn, ADOLF (1832-). A German metaphysician, born at Altstrelitz, Mecklenburg. He studied in Berlin, where he was made philosophical docent at the University in 1877 and honorary professor in 1897. He also became chairman of the Philosophical Society. The more important of his writings include: *Baco von Verulam's wissenschaftliche Principien* (1860); *Johann Gottlieb Fichte im Verhältnis zu Kirche und Staat* (1863); *Meister Eckhart der Mystiker* (1868); *Das Kulturideal und der Krieg* (1868); *Princip und Zukunft des Völkerrechts* (1871); *Giordano Bruno* (1872); *System der Rechtsphilosophie* (1882); *Das Gedächtnis* (1894); *Der Leib* (1898); *Aristotelische Metaphysik* (1907); *Aristotelische nikomachische Ethik* (1909).

LASSUS, lă'sus', JEAN BAPTISTE ANTOINE (1807-57). A French architect and archaeologist, born in Paris. He entered the Ecole des Beaux-Arts in 1828 and was a pupil of Lebas and Labrousse. He was one of the inspectors of the religious edifices on the Seine, and in 1840 he and Viollet-le-Duc were associated with Duban in the restoration of the Sainte Chapelle, which was not entirely completed until 1856. In 1842 Lassus and Viollet-le-Duc were intrusted with the restoration of Notre Dame. This work was interrupted by the restoration of Saint-Germain l'Auxerrois and of the cathedrals of Chartres and Le Mans, and the building of the parish church at Belleville. He prepared the *Album de Villard de Honnecourt* for publication (1858), and illustrated the elaborate *Monographie de la cathédrale de Chartres* (1843) prepared by Didron and Amaury Duval for the government. He contributed largely to the *Annales archéologiques*. Lassus stands at the head of the nineteenth-century Gothic revival in France.

LAS'SUS, ORLANDUS. A Dutch composer. See LASSO, ORLANDO DI.

LAST DAYS OF POMPEII, THE. A novel by Bulwer (1834). The story is laid immediately before and during the destruction of Pompeii (79 A.D.).

LAST JUDGMENT, THE. A favorite subject with painters of religious subjects, repre-

senting the episode described in Matt. xxv. 31 et seq. Christ is depicted, surrounded by the Apostles, prophets, and other holy personages, as the supreme Judge of the world, separating the blessed from the damned. The episode is usually accompanied by representations of heaven and hell. The Last Judgment was a favorite theme with mediæval painters; the most celebrated examples by them are Giotto's fresco in the Arena Chapel, Padua, Andrea Orcagna's in Santa Maria Novella, Florence, and the very large and celebrated mural painting in the Campo Santo, Pisa, formerly ascribed to Orcagna, but now to a follower of the Lorenzetti. The subject was painted frequently in the Renaissance, the most celebrated examples being the altarpiece by Fra Angelico in the Florence Academy, the frescoes by Luca Signorelli in the cathedral of Orvieto, the painting by Michelangelo in the Sistine Chapel, the most celebrated of all and the largest fresco in the world (for description, see MICHELANGELO), and the canvas by Tintoretto in Santa Maria dell'Orto. Among the Flemings it was represented by Rogier van der Weyden in the Hospital of Beaune, France, and several times by Rubens, the best example being in the Munich Academy. The most celebrated modern painting of the Last Judgment is the large fresco by Peter von Cornelius in the Ludwigskirche, Munich.

LAST MAN. A title used of Charles I of England by the Parliamentary party, intended to signify that he was the last King that England should have. Charles II was called the Son of the Last Man.

LASTMAN, lăst'mân, PIETER (1583-1633). A Dutch painter and engraver, born at Amsterdam. He was the son of a goldsmith and a pupil of Gerrit Pietersz Siveligh in Amsterdam. From about 1604 to 1607 he was in Italy, where he developed under the influence of Correggio and was associated with Elsheimer, Thoman, and Pinas. Afterward he practiced at Amsterdam, painting both religious and portrait subjects. His paintings recall the work of Elsheimer (q.v.), but his chief claim to fame consists in his having been the teacher of Rembrandt, in whose early works his influence may be seen. The great poet Joost van Vondel wrote several verses on a portrait of Thomas de Keyser (q.v.) painted by Lastman. There are old engravings of many of his paintings. Consult Kurt Freise, *Pieter Lastman, sein Leben und seine Kunst* (Leipzig, 1911).

LAST OF THE BARONS, THE. A novel by Bulwer (1843). The hero is Richard Neville, Earl of Warwick, and the scene is the Wars of the Roses in the fifteenth century.

LAST OF THE MOHICANS, mò-hé'kanz, THE. A novel by James Fenimore Cooper (1826). One of the so-called *Leatherstocking Tales*.

LAST OF THE ROMANS. A name used of Brutus, Cassius, Aëtius, and Cola di Rienzi. In modern times the title has been applied also to Congreve, Horace Walpole, and others.

LAST OF THE TRIBUNES. A title used of Cola di Rienzi (q.v.). His brief term of office is the subject of Bulwer's novel *Rienzi*, the *Last of the Tribunes*.

LAST OF THE TROUBADOURS. A title given to the Gascon poet Jacques Jaamin.

LAST ROSE OF SUMMER, THE. One of the most familiar of the songs written by

Thomas Moore for his *Irish Melodies*. The air was changed from an old melody, "The Groves of Blarney."

LAST SIGH OF THE MOOR, THE (Sp. *El ultimo suspiro del Moro*). The name given to a sandy hillock near Granada, Spain. On it Boabdil is said to have taken his last view of the Alhambra on Jan 2, 1492, after the conquest of the city by Ferdinand and Isabella.

LAST SUPPER, THE. See **LORD'S SUPPER** IN ART, THE.

LASUS (Lat., from Gk. *Λᾶσος*) (c.515 B.C.). A Greek poet, born at Hermione in Argolis, who lived at Athens during the reign of Hipparchus. He developed the dithyrambus (q.v.). He composed also a treatise (the first) on the theory of music. He is reputed to have had Pindar as his pupil. The few fragments of his poems are given by Bergk, *Poetae Lyrici Graeci*, iii (4th ed., Leipzig, 1887).

LAS VEGAS, las vā'gās. A town and the county seat of San Miguel Co., N. Mex., 132 miles east of Albuquerque, on the Gallinas, a branch of the Pecos River, and on the Atchison, Topeka, and Santa Fe Railroad (Map: New Mexico, D 3). It includes the city of Las Vegas, incorporated under the name East Las Vegas in 1888 and chartered as a city in 1896. It is the seat of the New Mexico Normal University and the New Mexico Insane Asylum, and contains a Carnegie library, and St. Anthony's Sanatorium. Las Vegas is an important wool market and the commercial centre for the adjacent country, which is interested principally in farming and stock raising. Its industrial establishments include railroad machine shops, wool-scouring mills, flour mills, carriage and wagon shops, planing mills, a foundry and machine shop, tie-preserving works, lumber and brick yards, candy and cigar factories, a brewery, etc. Six miles distant is the famous Las Vegas Hot Springs, a popular health resort, 6765 feet above sea level, noted for its fine scenery and clear and equable climate, as well as for its medicinal springs, which number some 40, with temperatures ranging from 75° to 140° F. Pop. (of the town), 1900, 2767; 1910, 3179, (of the city), 1910, 3755.

LASZLO VON LANLOS, lās'tō fōn lān'lōs, PHILIP ALEXIUS (1869-). A Hungarian portrait painter. He was born in Budapest and studied under Lotz at the Budapest Academy and afterward in Munich under Liesen-Mayer and in Paris under Lefebvre and Benjamin Constant. His earliest works are genre paintings, such as "In the Hofbräu House" and the "Old Woman Telling Fairy Tales" (1891). In 1892 he turned to portraiture, in which branch he manifested a power of characterization, sense of style, and sureness of brushwork which placed him in the front rank of modern portraitists. His most celebrated sitters included Prince Hohenlohe-Schillingsfürst (1899), Pope Leo XIII (1900), Jan Kubelik (1904), Theodore Roosevelt (1908), Princess Victoria Luise (1908), Emperor William II and Empress Auguste Victoria (1909), the King and Queen of Spain (1910), Lord Roberts (1911). The artist's portrait of himself is in the Uffizi, Florence. Among his charming portraits of children are "Miss Olive Trouton" (1910) and the artist's two sons (1910). Laszlo received gold medals at Munich, Düsseldorf, Vienna, St. Louis, Paris, and Venice. Among many marks of distinction he received that of

ennoblement in 1912 from the Emperor of Austria. After 1907 he resided in England.

LATACUNGA, lā'tā-kōōn'gā. The capital of the Province of León, Ecuador (Map: Ecuador, B 4). It is situated on a plateau 9000 feet above the sea and between the two neighboring volcanoes of Chimborazo and Cotopaxi. The region is volcanic, and the city has several times been destroyed by earthquakes; nevertheless, it has been rebuilt and is now one of the handsomest towns in the country, with fine public buildings and churches and a national college. It is on the railway from Guayaquil to Quito, 56 miles from the latter. The chief export is saltpetre, and it has some trade in fabrics, ceramics, hides, and alcohol. Near the city are a number of pumice-stone quarries. It was, however, an important place before the conquest and contained a palace of the Incas which still exists. It was occupied by the Spaniards in 1534. Pop. (est.), 12,000, largely Indians.

LA TAILLE, lā tī'y', JEAN DE (c.1540-c.1607). A French dramatist, born at Bondaroy. He studied law at Orléans and fought under Henry IV in his numerous wars. In his writing he imitated the ancients in the manner of Jodelle and produced tragedies, such as *Saul le furieux* (1572), and comedies, such as *Les corvauux* (1574), in which he is one of the first to introduce natural dialogue. He also wrote *Élégies, chansons, sonnets* (1574). His works were edited by De Naulde (1878-82)—His brother, JACQUES DE LA TAILLE (1542-62), wrote *La mort d'Alexandre* (1573) and *La mort de Daire* (1574), tragedies.

LATAKIA, lā'tā-ke'ā. A seaport of Syria, in the Vilayet of Beirut, opposite the island of Cyprus, and 75 miles north of the town of Tripoli (Map: Turkey, in Asia, C 3). It is poorly built, but has some Roman antiquities, notably a triumphal arch, generally assigned to Septimius Severus. In ancient times it was called Laodicea and in the Middle Ages was a flourishing port of considerable importance to the Crusaders. The commercial importance of the place now depends chiefly on the famous Latakia tobacco, which is grown in the vicinity and exported to Egypt and England. The harbor is small and shallow, and steamers usually anchor in the roadstead, there is a lively export trade in tobacco, silk, sponges, and eggs. Latakia is the seat of an American mission. Pop., according to latest estimates, 25,000, mostly Mohammedans.

LATEAU, lā'tō', LOUISE (1850-83). A Belgian visionary, born at Bois d'Haine. After entering the Third Order of St. Francis of Assisi she had a vision of Christ and was thereafter thought to be stigmatized with wounds which bled each Friday (1868). Some of the Catholic clergy urged the miraculous nature of the phenomenon, and the girl's home became a place of pilgrimage. A Belgian pathologist diagnosed her disease as stigmatic neuropathy. When Bishop Dumont, of Tournay, who had seen in her case a miracle in behalf of the Catholic church, was deposed, she sided with him and left the Roman Catholic communion. Consult August Rohling, *Louise Lateau, die Stigmatisirte von Bois d'Haine* (Paderborn, 1874), and Warlomont, *Rapport médical* (Brussels, 1875).

LATEEN' SAIL (Fr. *latine*, Latin, from Lat. *Latinus*, Latin; so called in allusion to the use of this sail in the Mediterranean). A large triangular sail, common in the Mediterranean,

The upper edge is fastened to the lateen yard, a long tapering spar which is held at an angle of about 45° with the deck by means of a short mast crossing it at a third or a fourth of the way up from the lower or forward end.

LATENCY. See **HEREDITY**.

LA TÈNE (là tân) **PERIOD.** The name applied to the second early Iron age in Europe, the first being called Hallstattian. It lasted from the seventh century until the first century B.C. in France, Bohemia, and England, but in Scandinavia it was prolonged until the tenth century A.D. See **NEOLITHIC PERIOD**.

LATENT FAULT, or DEFECT. A defect in an article which is not discoverable upon ordinary inspection. In general, the vendor of a chattel is under a duty to disclose to the buyer latent, but not patent, defects in the article sold. A gratuitous lender may be legally liable in damages for an injury sustained by the borrower through a latent and undisclosed defect in the borrowed article. He is not bound, however, to put the thing into a safe condition for use, nor does he impliedly undertake or warrant that it is fit for use. One who hires an article to another, however, does impliedly engage that it is free from all latent faults which reasonable care and skill could detect or guard against. A caterer is held to a similar engagement as to the wholesomeness of the food he supplies to guests. For the discussion of this topic in some of its important connections, see **CAVEAT EMP-TORE**; **CARRIER, COMMON**; **MASTER AND SERVANT**; **NEGLIGENCE**.

LATENT HEAT. See **HEAT**.

LATERAN, CHURCH AND PALACE. The church of St. John Lateran is the first in dignity of the Roman churches, styled in Roman usage "the mother and head of all the churches of the city and of the world." It occupies the site of the palace of Plautius Lateranus, confiscated by Nero and later an Imperial residence. The palace was given by Constantine to Pope Melchiades in 312, and the first basilica built here by Pope Sylvester I in 324, of which a few fragments still remain. This was overthrown by an earthquake in 894; the second church, dedicated now to St. John Baptist, was burned in 1308; and the third met a similar fate in 1360. The fourth restoration was made by Urban V (1362-70). Through all these reconstructions the original basilican form of the building was measurably preserved; but the edifice has since been largely modernized with unhappy effect. Especially destructive of its pristine beauty and dignity was the reconstruction by Borromini in the sixteenth century, in a vulgar baroque style; but the east front by Galilei (1734) is a highly impressive work. The solemn entrance of the Pope into office is celebrated by his taking possession of this church; at St. Peter's he is Pope, but here Bishop of Rome. Over the portico is the balcony from which, before 1870, the pontiffs gave their solemn benediction *urbis et orbi*. Five councils regarded as ecumenical by the Roman Catholic church have been held here (see **LATERAN COUNCILS**); and it is here that tradition places the first meeting of St. Francis and St. Dominic. Incorporated in the group formed by the church and palace is the Lateran baptistery, believed to have been erected by Constantine. The Lateran Palace was the habitual residence of the popes from the fourth century until the migration to Avignon; after their return they re-

moved to the Vatican. The ancient building was destroyed by Sixtus V, the only remnants are the private chapel of the popes, and one end of their dining hall, known as the Triclinium, in the building behind which, attached to a Passionist convent, is the *Scala Santa* (holy staircase), supposed to have been that of Pilate's palace at Jerusalem, said to have been brought to Rome by St. Helena. Those who believe that the feet of Christ touched it ascend it only on their knees, and the 28 stone steps are covered by a wooden casing. The ancient chapel above it, where no one but the Pope is permitted to say mass, contains a portrait of Christ reputed to have been begun by St. Luke and finished by an angel, whence it is known as the *Acheiropoieton*, or picture made without hands. The modern Palace of the Lateran, built by Domenico Fontana (c 1580) for Sixtus V, and now under the control of the Italian government, contains two extremely valuable museums—the *Museo profano*, of objects of pagan antiquity, and the *Museo Cristiano*, a museum of Christian archaeology, due principally to Pius IX. Consult C. J. K. Bunsen, *Die Basiliken des christlichen Roms* (Munich, 1843). De Fleury, *La Letéran au moyen âge* (Paris, 1877). R A Lanciani, *Pagan and Christian Rome* (Boston, 1893); A. J. C. Hare, *Walks in Rome* (London, 1913).

LATERAN COUNCILS. The councils held in the Lateran Basilica at Rome. (See **LATERAN, CHURCH AND PALACE**) The first one of importance was called by Martin I in 649 to condemn those who denied that there were two wills in Christ, the divine and the human. (See **MONOTHELITISM**.) It was attended by more than 100 bishops of Italy, the adjacent islands, and Africa. The numerous reforming synods of the eleventh century were usually held in the Lateran, since it was then the residence of the popes. That of 1059, under Nicholas II, is important for its decisions on clerical celibacy and papal elections. Those of 1105, 1112, and 1116 dealt with the question of investiture (q.v.), as did the Council of 1123, known among Roman Catholics as the First Lateran Council in the list of those which they account ecumenical. (See **COUNCIL**.) It was called by Calixtus II, was attended by more than 300 bishops, and confirmed the articles of the Concordat of Worms, an agreement between the Emperor and the Pope. The Second Lateran Council in this classification was held by Innocent II in 1139 and was composed of over 1000 bishops. It provided for the healing of the schism caused by the Antipope Anacletus II and condemned the innovations of the Petrobrusians and Arnold of Brescia. The third, held by Alexander III in 1179 after the conclusion of peace with Frederick Barbarossa, regulated papal elections (requiring two-thirds of the electors for validity), settled the qualifications for the episcopate, and passed a number of disciplinary canons. The fourth, convened by Innocent III in 1215, known as "the General Council of Lateran" or "the Great Council," strongly supported the Crusades, condemned the doctrines of the Cathari and Waldenses, giving ecclesiastical sanction for the first time to the expression "transubstantiation" as an explanation of the mode of Christ's presence in the Eucharist, required every member of the Church who had reached the age of discretion to approach the sacrament of penance at least once a year, forbade clandestine marriages, and passed many other important dis-

ciplinary canons. The fifth, opened by Julius II in 1512, and closed by Leo X in 1517, dealt with the schism growing out of the Council of Pisa, provided for resistance to the Turks, and replaced the Pragmatic Sanction by a concordat with France. In 1725 the Pope called the bishops directly dependent on Rome to the Lateran to consult regarding the suppression of Jansenism (q.v.) and the confirmation of the bull "Unigenitus." Consult K. J. von Hefele, *Concilien-geschichte* (9 vols., Freiburg, 1855-90).

LATERES COCTI, COCTILES, CRUDI.

The ancient Roman names for various kinds of bricks. Consult Smith, *A Dictionary of Greek and Roman Antiquities*, vol. ii (3d ed., London, 1890), and Middleton, *The Remains of Ancient Rome* (2 vols., ib., 1892). See BRICK.

LATERITE (from Lat. later, brick, tile).

The name given to a superficial deposit or soil which covers wide areas in tropical lands, especially in the Sudan, Sahara Desert, Brazil, and India. It is a loose, porous, reddish, or yellowish mass, composed largely of a claylike substance and iron oxides, the latter determining the color. The clayey material consists partly of hydrargyllite, the hydrate of aluminium. Laterite is formed by the decomposition of various rocks, especially feldspathic ones like granite, under tropical climates; in the process of decomposition the more soluble constituents, represented by the alkalies and alkali earths, are removed and the aluminium and iron remain behind to form new compounds. When freshly quarried, laterite is soft, but hardens on exposure to a rather firm rock.

LATEX (Lat., juice). The milky or colored juice which is found in special cells or tubes in plants, confined to certain families of the angiosperms, viz., the Papaveraceæ, Asclepiadaceæ, Apocynaceæ, Euphorbiaceæ, Urticaceæ, Lobeliaceæ, Campanulaceæ, Cichoriaceæ, Aroidæ, and Musaceæ. The first eight families belong to the dicotyledons, and the last two to the monocotyledons. Other monocots contain mucilage vessels, which agree in many features with the latex vessels; the contents, however, lack the milky appearance and are slimy. In most plants the latex is whitish or cream color; in the blood-root, however, it is of a deep orange red and in some other members of the poppy family of a lemon yellow. It is a watery fluid, containing many different substances in solution, and a considerable number in the form of minute droplets or in the solid state, merely suspended in water. The latter fact gives to it somewhat the character of an emulsion and probably promotes turgor (q.v.) of the latex tubes. That they are highly turgid is shown by the fact that when a plant containing latex is wounded the juice exudes promptly and in considerable amount. The dissolved substances are (1) salts, especially those of calcium and magnesium, varying much in relative amount and character in different species; (2) sugars, gums, and other carbohydrates; (3) proteids; (4) tannins, alkaloids, enzymes, and various waste products. The substances held in suspension are (1) minute granules of gums, resins, and caoutchouc, (2) oils, and (3) tannins, the two latter in the form of fluid droplets. Other substances, such as starch grains, proteid grains and crystals, oil drops, etc., are embedded in the protoplasm with which each tube is lined. (See below.)

The latex vessels are of two distinct kinds, (1) articulated and (2) nonarticulated. The

articulated tubes arise from the early fusion of rows of cells by the partial or complete absorption of their end walls. A row of cells extending sideways may fuse with the main line and so form side branches; or, outgrowths may arise from the main tube, penetrate between the adjacent cells, and finally fuse with a neighboring

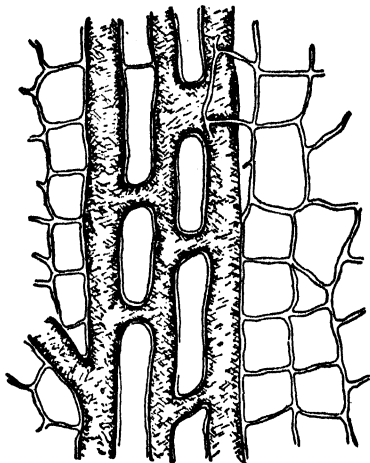


FIG. 1. ARTICULATED LATEX VESSELS FROM THE STEM OF LACTUCA.

tube. The articulated latex vessels, therefore, are distinguished not only by their irregular outline, in which the mode of origin may be traced, but also by the numerous branches connecting with one another and so forming a network (Fig. 1). The nonarticulated vessels arise in the very young embryo through the differentiation of meristem tissue. The cells destined for latex tubes elongate, grow, and branch as fast as the neighboring tissue grows, and push their way almost independently among the adjacent

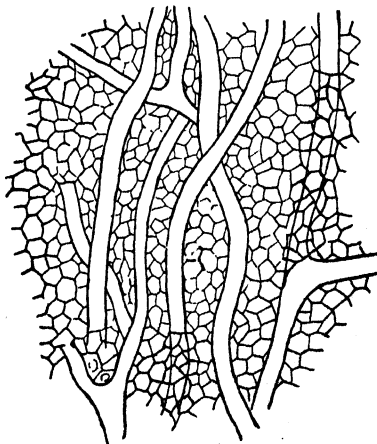


FIG. 2. NON ARTICULATED LATEX VESSELS. Longitudinal section of the cortex of *Euphorbia resinifera*.

young cells. While they branch abundantly, the branches do not join others and form a network as the articulated tubes do. They are distinguished by their smooth contour, often thick walls, and the absence of anastomosing branches (Fig. 2). The latex vessels extend through the whole body of the plant, standing in close rela-

tion to the nutritive tissue of the leaves on the one hand (Fig. 3) and the growing regions on the other. In the older parts of the stem they are most abundant in the cortex and the phloem. They may be considered as a special form of conducting tissue by means of which the various

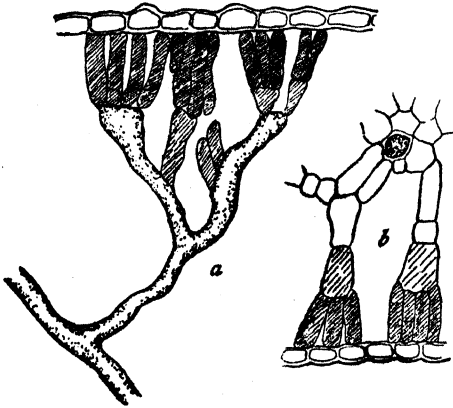


FIG. 3. ENDINGS OF LATEX VESSELS IN THE LEAVES OF TWO SPURGES.

a, *Euphorbia myrsinites*; b, *E. biglandulosa*. In a the latex vessel is shown lengthwise; in b it is seen in section. The shaded cells are the palisade parenchyma, which makes food.

foods contained in the latex are readily distributed from regions of manufacture or storage to the regions of use. When rich in food substances, the latex is very opaque, becoming more translucent as the food diminishes. These variations in the food content of the latex are found to be parallel with the nutritive necessities of the plant. The latex tubes are lined with a delicate layer of protoplasm, in which are embedded the various special organs, nuclei of peculiar form, starch formers (leucoplasts, q.v.), etc. The latex itself lies within this protoplasmic body, occupying the same position as the cell sap in an ordinary cell. The latex therefore may be looked upon as corresponding to the cell sap which is present in every active cell, from which it differs only in the abundance and nature of the dissolved and suspended materials. Economically the most important substance in the latex is caoutchouc, which after manufacture constitutes the rubber of commerce. See CONDUCTION; RUBBER.

LATH. See LATHS AND LATHWOOD.

LATHAM, JOHN (1740-1837). An English ornithologist, born at Eltham, Kent. He studied anatomy in London under Hunter and until 1796 practiced medicine at Dartford. He then settled at Romsey, Hampshire, and devoted himself entirely to the study of nature. In 1788 he had been one of the founders of the Linnean Society. Especially interested in ornithology, he made a fine collection of birds and published *A General Synopsis of Birds* (3 vols., 1781-85) and *A General History of Birds* (11 vols., 1821-28), finished when he was 88 years old. For this latter important work he himself designed, etched, and colored the illustrations.

LATHAM, ROBERT GORDON (1812-88). An English philologist and ethnologist, born at Billingborough, Lincolnshire. He was educated at Cambridge and took the degree of M.D., but, having made a tour in Denmark and Nor-

way, he was led to direct his attention particularly to the Scandinavian languages. For several years he was professor of the English language and literature in University College, London. His chief works are: *English Language* (1841); *Natural History of the Varieties of Mankind* (London, 1850); *Ethnology of the British Colonies*; *Man and his Migrations* (ib., 1851); *Descriptive Ethnology* (1859); *The Nationalities of Europe* (1863); *Outlines of General or Developmental Philology* (1878); *Russian and Turk from a Geographical, Ethnological, and Historical Point of View* (1878).

LATHE, lATH. See METAL-WORKING MACHINERY; WOODWORKING MACHINERY.

LATHE, or LATH (AS. *læþ*, *lēþ*, district; possibly connected with Dan. *lægd*, levying district, situation, and with AS. *liegan*, Goth. *ligan*, OHG. *ligen*, Ger. *liegen*, OChurch Slav. *ležati*, to lie, Lat. *lectus*, Gk. *λέχος*, *lechos*, couch). Formerly a part or a division of a county among the Anglo-Saxons consisting of several hundreds. At present it consists of four or five hundreds and is confined to the County of Kent. Formerly there was a lathe reeve, or bailiff, in each lathe. The same number of hundreds which constitute the *lathe*s of Kent are called the *rapes* of Sussex. In Ireland the lathe is intermediate between the tithing and the hundred.

LATHOM HOUSE. An historic mansion in Lancashire, England, some 13 miles northeast of Liverpool. In the era of the Plantagenets the place gave its name to the proprietor, Robert Fitzhenry (Earl of Lathom). In the reign of Edward III it passed with the heiress Isabel into the family of the Stanleys, who owned it for about three centuries. At that time it was a mansion strongly fortified by a moat, palisades, and a wall with nine towers. In 1644 Charlotte, Countess of Derby, in the absence of the Earl, defended it heroically for four months against a Parliamentary army under Fairfax. Later, however, it was taken and destroyed. The present house, erected about 1750, is a large fine building, in the Italian style of architecture, furnished with a colonnade of Ionic pillars, and the park belonging to it is 4 miles in circuit. Consult Draper, *The House of Stanley* (Ormeskirk, 1864), and, for a journal of the siege in 1644, Mrs. Hutchinson, *Memoirs of the Life of Colonel Hutchinson* (London, 1846).

LA'THROP, FRANCIS (1849-1909). An American decorative and portrait painter. He was born at sea near the Hawaiian Islands and studied under Farrer in New York, then at the Dresden Academy. Later he was a pupil of Madox Brown and Burne Jones in London and he also studied the technique of stained glasses in William Morris's school. The influence of these Pre-Raphaelite teachers is visible in all Lathrop's work. On his return to America in 1873 he devoted himself to portraiture, to stained glasses, and especially to decorative painting. He assisted La Farge in the decoration of Trinity Church, Boston, the chancel of which he designed. Other good examples of his decorative works are the mural paintings "Moses with the Tablets of the Law," in Bowdoin College chapel; "Apollo," over the proscenium of the Metropolitan Opera House, New York; "The Light of the World," in St. Bartholomew's, New York; designs for a marble mosaic, "Widows and Orphans," in the old Equitable Building, New York. His best-known

stained glasses are the Marquand Memorial window in Princeton College chapel and the chancel window of Bethesda Church, Saratoga, N. Y., for which he received a gold medal at Philadelphia in 1889. Lathrop also illustrated artistic publications like Clarence Cook's *House Beautiful*. He was one of the founders of the Society of American Artists, where some of his early portraits, including those of Ross and Thomas Winant, were exhibited. In 1906 he was elected associate of the National Academy of Design.

LATHROP, GEORGE PARSONS (1851-98). An American journalist and poet, born at Oahu, Hawaiian Islands, Aug. 25, 1851. He was educated in New York and Dresden (1867-70), returned thence to New York, began, but soon abandoned, the study of law, went to England, there married (1871) Rose, second daughter of Nathaniel Hawthorne. (See **LATHROP, ROSE HAWTHORNE**.) He was from 1875 to 1877 assistant editor of the *Atlantic Monthly*, then till 1879 editor of the *Boston Courier*, and afterward resided in Concord and New York. He founded the American Copyright League (1883). His writings include: *Rose and Roof Tree* (1875), poems, *Study of Hawthorne* (1876); *Afterglow* (1876), a novel; *A Masque of Poets* (1877); an edition of Nathaniel Hawthorne's *Works* (1883), with a biography; *An Echo of Passion* (1882); *In the Distance* (1882); *Spanish Vistas* (1883); *History of the Union League in Philadelphia* (1883); *Newport* (1884); *Gold of Pleasure* (1892); *Dreams and Days* (1892), verses; and other works of minor significance. With his wife he published *Annals of Georgetown Convent* and *A Story of Courage* (1894).

LATHROP, JOHN (?-1653). An American Congregational clergyman, whose name is also spelled Lothrop, Lothrop, and Laythrop. He was born in England, studied at Oxford, took holy orders, and was rector of a church at Egerton, Kent, until about 1624, when he succeeded Henry Jacob as pastor of the first Independent or Congregational church in England. This London congregation was much harried by the ecclesiastical authorities. Lathrop's wife died while he was imprisoned (1632-34), and, having lost a part of his church through a schism on the question of baptism, in 1634 he removed to Massachusetts, becoming first pastor at Scituate and in 1639 at Barnstable. One of the authorities for Prince's history of New England is "an original register, wrote by the Rev. John Lothrop," which contains a record of the affairs of these two towns.

LATHROP, JOHN HIRAM (1799-1866). An American educator, born at Sherburne, N. Y. He graduated at Yale in 1819, was tutor there from 1822 to 1826, and then entered the legal profession, but after six years left it and became a teacher first at Norwich, Vt., then at Gardiner, Me. He was professor of mathematics and natural philosophy from 1829 to 1833, and of law, history, and economics from 1835 to 1840, at Hamilton College, and was president of the University of Missouri from 1840 until 1849, after which he was successively chancellor of the University of Wisconsin, president of Indiana University, professor of English literature in the University of Missouri, and again president of the last-named institution from 1865 until his death.

LATHROP, JULIA CLIFFORD (1858-). An American social worker. She was born at

Rockford, Ill., studied at Rockford College, and graduated from Vassar College in 1880. She made special studies in the care of the insane, in the better education of children, and in juvenile laws, spending much of her time at Hull House, Chicago, after 1899, and making special investigations in foreign countries. Except for four years she was a member of the Illinois State Board of Charities from 1893 to 1909. For a time she was president of the Illinois Society for Mental Hygiene and vice president of the Chicago School of Civics and Philanthropy and of the Juvenile Protective Association. She became the first chief of the Children's Bureau of the United States Department of Labor, provided for by law in 1912. She is author of *The Children's Bureau* (1912).

LATHROP, ROSE HAWTHORNE (1851-). An American poet and philanthropist, daughter of Nathaniel Hawthorne. She was born at Lenox, Mass., lived in England and Portugal (1853-60), and studied art at Dresden and in London, where she married George Parsons Lathrop (q.v.) in 1871. She wrote many stories and sketches; a volume of poems, *Along the Shore* (1888); and *Memories of Hawthorne*, with her husband (1897). In 1896 she established in New York City St. Rose's Free Home for Cancer, and soon after, with the title of Mother Mary Alphonsa, she became head of a Dominican community of the Third Order and director of a charitable home in that city.

LATHROP, WILLIAM LANGSON (1859-). An American landscape painter, born in Warren, Ill. Practically self-taught in his art, his work is to be found in the Metropolitan Museum, New York ("The Meadows"); the Carnegie Institute, Pittsburgh ("Abandoned Quarry"); the Albright Art Gallery, Buffalo; Minneapolis Art Museum ("Clouds and Hills"); National Museum of Art, Washington ("Three Trees"); and elsewhere. He was elected to the National Academy in 1907 and won numerous medals and prizes. His landscapes are characterized by refreshing sincerity of conception united to a vigorous and able technique.

LATHS AND LATHWOOD (AS. *latta*, OHG. *latta*, Ger. *Latte*, lath, thin plate; connected with MHG *laden*, *lade*, board, and with Ir. *slat*, Bret *laz*, rod, Welsh, *lath*, rod). Laths are thin and narrow strips of wood (usually 4 feet long, 1½ inches wide, and ¼ inch thick), made either by splitting lathwood, which is the Norway spruce fir (*Pinus abies*), or by sawing them from the shorter lengths of the lumber. Laths are nailed to the studs or furring strips of walls and to the rafters of ceilings; they are placed slightly apart to receive the plaster, which, by being pressed into the intervals between the laths, is retained, and when dry is held securely on the wall. Slaters' laths are longer strips of wood nailed on to the framework of the roof for the purpose of sustaining the slates or tiles, which are fastened to the laths by nails. "Metallic lath" and "wire lath" are modern American inventions, now widely used in place of wooden laths in fireproof construction (q.v.). The first is made in various forms from sheets of steel, perforated in various ways, as in "expanded metal" lathing; the second is a species of netting of galvanized steel wire.

LATHYRISM, lath'ri-z'm. See LUPINOSIS.

LATHYRUS (Neo-Lat., from Gk. *ἄδυρος*, sort of pulse). A genus of plants of the family

Leguminosæ. The leaves of many species are furnished with tendrils and are pinnate, but often with only one pair of leaflets. Some species have the leaves reduced to tendrils, the enlarged stipules performing the usual functions of the leaves. The species are numerous, annual and perennial herbs, natives of temperate countries in the Northern Hemisphere and the mountains of tropical Africa and South America. Few are American; several of the European species have been introduced in cultivation and have escaped and become established; some are



LATHYRUS.

natives of Great Britain; some have very beautiful flowers of considerable size, on account of which they find a place in flower gardens, as *Lathyrus latifolius* and *Lathyrus sylvestris*, the latter a native of England and the former of the south of Europe, both perennials and known by the name of everlasting pea. The sweet pea (*Lathyrus odoratus*), a native of the East, one of the best-known ornaments of our flower gardens, is a hardy annual, esteemed not only on account of the beauty of its flowers but of their delightful fragrance. The most common British species is the meadow vetchling (*Lathyrus pratensis*), with bright yellow flowers. *Lathyrus sativus*, the chickling vetch or lentil of Spain, a native of the south of Europe, with flowers generally of a bright blue color and winged pods, is cultivated in India, and in Germany, France, and other countries for its seeds, the flour of which, however, is mixed with other flour rather than used alone, on account of narcotic principles which it possesses, and which caused its cultivation for food to be interdicted in Württemberg in 1871. The seeds of *Lathyrus cicera*, although sometimes used by the country people of France, are even more dangerous. Those of *Lathyrus aphaca*, a species sometimes found on gravelly soils in England, possess similar qualities when ripe, but in an unripe state are wholesome. They are eaten with the pods which contain them. *Lathyrus tuberosus*, a native of Germany and other parts of Europe but not of Great Britain, is cultivated on the Continent for its small, starchy tubers, which are sometimes called Dutch mice; in Germany they are

known as earthnuts. The herbage of the plant is relished by cattle. In Alaska and elsewhere the unripe seeds of the beach pea (*Lathyrus maritimus*) are eaten as a vegetable. *Lathyrus sylvestris wagneri* has been extensively exploited as a fodder plant in Germany, France, and the United States. It is very resistant to drought when once established and yields abundant green forage of a nutritious character.

LATICIFEROUS TISSUE. Latex. See HISTOLOGY; LATEX.

LATIMER, HUGH (c.1490–1555). One of the most distinguished of the English reformers. He was born at Thurcaston in Leicestershire. He was educated at Cambridge and became attached to the new learning and divinity which had begun to establish themselves there. He soon became a zealous preacher of the reformed doctrines and in consequence was embroiled in many controversies. The dispute about Henry VIII's marriage with Catharine of Aragon brought Latimer more into notice. He was one of the divines appointed by the University of Cambridge to examine as to its lawfulness, and he declared on the King's side. This secured Henry's favor, and he was appointed one of his chaplains and received a living in Wiltshire (1531). In 1535 he was appointed Bishop of Worcester, and at the opening of Convocation on June 9, 1536, he preached two very powerful and impressive sermons, urging the necessity of reform. After a while the work of reform rather retrograded than advanced, and Latimer found himself with his bold opinions in little favor at court. He retired to his diocese and labored there in a continual round of "teaching, preaching, exhorting, writing, correcting, and reforming, either as his ability would serve or the time would bear." This was his true function. He was an eminently practical reformer. Towards the close of Henry's reign, and when the reactionary party, headed by Gardiner and Bonner, was in the ascendant, Latimer resigned his bishopric (1539) and till 1546 lived in great privacy. He was looked upon with jealousy and closely watched, and finally, on coming up to London for medical advice, he was brought before the Privy Council and cast into the Tower. On the accession of Edward VI, the next year, he was released and again appeared in public. He declined, however, to resume his episcopal functions, although his old bishopric was offered to him. He devoted himself to preaching and practical works of benevolence. After the death of Edward and the accession of Mary (1553) he and other reformers were arrested in their career of activity. Latimer was put in prison, and examined at Oxford in 1554. After his examination he was transferred to the common jail there, where he lay for more than a year, feeble, sickly, and worn out with his hardships. On Sept. 30, 1555, he was summoned before certain commissioners appointed to sit in judgment upon him and Ridley, and after trial, on October 1, he was condemned to be burned. He suffered along with Ridley, opposite Balliol College, on Oct. 16, 1555. The account of his trial and execution is in Foxe's *Book of Martyrs*. His *Remains and Sermons* were issued by the Parker Society (2 vols., Oxford, 1844–45). Consult his biography by R. Demaus (London, 1869; new ed., 1881), and by R. M. and A. J. Carlyle (ib., 1899).

LATIMER, JAMES ELIJAH (1826–85). An American Methodist Episcopal clergyman and

educator, born at Hartford, Conn. Graduating from Wesleyan University in 1848, he was professor of ancient languages in Newbury (Vt.) Seminary for one year, professor of Latin and geology in Genesee Wesleyan Seminary, Lima, N. Y., for two years, and from 1854 to 1857 principal of the Fort Plain (N. Y.) Seminary. In 1858 he served as a professor in Elmira Female College, in the same year entering the ministry in the East Genesee conference of his church. He visited Europe in 1868 to study methods of instruction. In 1870 he was elected professor of historical theology in Boston University School of Theology, eight years later he became dean of the faculty, and was transferred to the chair of systematic theology, which he retained until his death.

LATIN AMERICA. A name given to those portions of America which are inhabited chiefly by races of Latin stock, thus including Mexico, Central America, South America, and parts of the West Indies.

LATINA VIA. See LATIN WAY.

LATIN CROSS. A cross with the lower limb considerably longer than the other three, as distinguished from the Greek cross, which has the four arms equal.

LATIN EMPIRE. The name given to the Empire established by the Crusaders, in 1204, after their capture of Constantinople. It came to an end in 1261. See BYZANTINE EMPIRE, CRUSADE.

LATIN GATE (Lat *Porta Latina*) A former gate in the Aurelian Wall of Rome, through which the Latin Way (q.v.) left the city. It was closed in 1829, but has recently been opened again.

LATINI. An Italic race, already settled in prehistoric times in the broad plains south of the Tiber, between the sea and the Apennines. Their origin is obscure. The Latin language (q.v.) is most closely related to that of the Faliscans (see FALERII) north of the Tiber, and more remotely to those of the Oscans, Umbrians, and Sabellians. Their territory, called Latium, originally extended not far south of the Alban hills, but was carried, under Rome's dominion, as far as the river Liris (now Garigliano), where Campania adjoined. In very early times the Latini were subdued by the Etruscans, as the names of many Latin towns, e.g., Tusculum, show. At the traditional landing of Æneas in Italy, we find the Latini (typified by the fabulous King Latinus, q.v.) settled in independent towns. At a later time we find Alba Longa as the head of a loose confederacy of 30 Latin towns, with their common sanctuary of Jupiter Latialis (see JUPITER) on the Alban Mount. Rome was looked upon as a colony of Alba Longa, but early became the ruler of all Latium. In the Latin War (340-338 B.C.) the Latins were allied with the Campanians against the Romans, but on the defeat of the former the Latin confederacy was dissolved, and its parts were gradually absorbed in the Roman stock. For a statement of the results of some researches into their origin, consult Duff, *A Literary History of Rome* (London, 1909).

LATINI, là-tè-nè, BRUNETTO (c.1220-c.1295) An Italian writer, born at Florence. He belonged to the party of the Guelphs and was sent on an embassy to Alfonso X of Castile in 1260. The Guelphs were defeated at Montaperti during his absence, and he had therefore

to keep out of Tuscany. He may have spent the next six or seven years in France, but at any rate he was back in Tuscany again by 1269, holding office under Charles of Anjou. Occupying in turn various offices, he attained in 1287 the high rank of prior. Dante's indebtedness to his work and affectionate esteem for him as a scholar transpire in *Inferno*, xv. Before his sojourn in France he had already written something; during that period he composed the poem in Italian heptasyllables which is now generally known as the *Tesoretto*, to distinguish it from the Italian translation of his *Trésor*. The *Tesoretto* is the earliest Italian example of the allegorical and didactic poem so important in old French literature and there best represented by the *Roman de la rose*. It is incomplete and may have been intended as an introduction to the encyclopædic *Li livres dou tresor*. This prose work, a compendium of mediæval lore, Brunetto put in French, because he esteemed this language more delightful and wore widely known than Italian. Its subject matter was derived from various Latin and French sources (*Roman de la rose*, Isidor of Seville, Bible, etc.); the work was probably composed between 1262 and 1266. To his friend Rustico di Filippo he addressed the *Favolello*, a treatise, in seven-syllabled verse like the *Tesoretto*, on the duties of friendship. To Brunetto has also been attributed a vulgarization of Cicero's *De Inventione*. Consult: Zannoni, *Il tesoretto e il Favolello di Ser B. L.* (Florence, 1824), edition of *Li livres dou tresor* by Chabaille (Paris, 1863); the editions of the *Tesoretto* by Gaiter (Bologna, 1878-83) and by Wiese, in the *Zeitschrift für romanische Philologie*, vol vii (Halle, 1882); Tho. Sundby, *Della vita e delle opere di Brunetto Latini*, translated from the Danish by Renier (Florence, 1884); Marchesini, *Due studi biografici su Brunetto Latini* (Venice, 1887), id., *Brunetto Latini notaro* (Verona, 1890); Bertoni, *Il Duecento* (Milano, 1890).

LATIN KINGDOM OF JERUSALEM.

The kingdom established by the Crusaders in 1099, which lasted until 1187. When, on July 15, 1099, Jerusalem was taken, it became necessary for the Christian conquerors to establish some permanent rule. Naturally the only system of government well known to them, the feudal, was adopted. The written code known as the "Assize of Jerusalem" (q.v.), however, belongs to a later period. Godfrey de Bouillon (q.v.) was elected Baron and Defender of the Holy Sepulchre. Godfrey died in 1100 and was succeeded by Baldwin I, who took the title of King and ruled until 1118. He was in turn succeeded by his nephew, Baldwin II (1118-31), who was followed by his son-in-law, Fulk, Count of Anjou (1131-43). Under him the Kingdom reached its highest development, and most of Syria was in the hands of the Christians. Meanwhile, however, a strong Mohammedan power was being formed, Edessa was captured, and the Christians were threatened. The reign of Baldwin III (1143-62) was marked by some coöperation between the Greeks and the Latins, due to the marriage of Baldwin with the daughter of the Emperor Manuel. The brother and successor of Baldwin III, Amalric I (1162-74), also married a Byzantine princess. His son and successor, Baldwin IV (1174-85), was a leper. He was succeeded by a child, Baldwin V, who ruled only a year.

The Kingdom was weakened by an unwise attack upon Egypt, and the leading nobles were not united in policy. The last monarch was Guy of Lusignan (1185-87), an adventurer from the west who married the heiress. On July 4, 1187, Saladin (q.v.) defeated King Guy at Hattin and took him prisoner. On Oct. 2, 1187, Jerusalem fell. After this Jerusalem was in the hands of the Christians for the years 1229-44, and the Kingdom remained in existence nominally until the fall of Acre in 1291. The title of King of Jerusalem was inherited by several royal lines. Consult Röhrich, *Geschichte des Königreichs Jerusalem* (Berlin, 1898). See CRUSADE.

LATIN LANGUAGE. The language of ancient Rome. It was originally the vernacular of the Latini (q.v.), a small tribe of central Italy, occupying the plain of Latium (q.v.), south of the Tiber, between the Apennines and the sea, and was thus the language of the founders of Rome. With the growth and the conquests of that city it spread until it became the almost universal language of the Western civilized world. (Consult Abbott, *The Common People of Ancient Rome*, first two papers, New York, 1911, and Budinsky, *Die Ausbreitung der lateinischen Sprache*, Berlin, 1891.) Latin belongs in its origin to the so-called Indo-European (Indo-Germanic, Aryan) group of languages, which comprises, in Asia, the non-Dravidian tongues of India, Persian, and Armenian; and in Europe, the Hellenic, Italic, Celtic, Teutonic (Germanic), Balto-Slavonic, and Albanian languages. A similarity of sound, inflection, and vocabulary shows that these languages are all descended from a common source, or *Ursprache*.

The Latin language is not original in Italy. A wave of migration from the north in prehistoric times brought into the peninsula the hordes of Italic people, who pushed their way to the southward, driving before them or assimilating the earlier inhabitants, until they occupied all the central and northern regions from sea to sea. Of these Italic invaders there were, according to one theory, two ethnic and linguistic divisions of quite unequal extent—the Umbro-Sabellians (see ETRURIA) and the Latino-Faliscans. (See FALERII; ITALIC LANGUAGES.) The former, with closely related dialects, occupied in historic times all the vast mountainous country south of the Rubicon and east of the Tiber, far into Apulia and Lucania—in fact, all central Italy except the narrow coast plain north and south of the Tiber mouth (which was held by the lesser division of Latins and Faliscans). Doubtless in earlier times the Umbro-Sabellians had extended still farther to the north and the west, whence they were dislodged by the invasions, first of the Etruscans, then of the Gauls.

The Umbro-Sabellian races—Umbrians, Volscians, Æquians, Sabines, Marsi, Hirpini, Frentani, Samnites, and others—spoke a congeries of related dialects, of which relatively little is known to-day, and that entirely from inscriptions, place names, and glosses or casual references in the ancient writers. But it is certain that there were two main divisions of language, the Umbrian and the Oscan; the former was spoken in the north, the latter in the centre and the south of the region. For details, see ITALIC LANGUAGES.

The second group of Italic dialects (the

Latin-Faliscan) was spoken over a very limited area. The Latin was used south of the Tiber, in Latium (q.v.); the Faliscan, so far as we know now, was spoken in historical times only in Falerii (q.v.) and in the Ager Faliscus, the district about Falerii.

But of all the members of the Italic group, Latin alone, so far as we know, certainly attained the rank of a literary language, and, owing in part to Roman conquests, extended itself not only over all Italy, but over northern Africa and all western Europe, where it still holds ground, as it were, in the form of the Romance languages (q.v.). Some have held, however, that there was an Oscan literature.

Three stages or states of development are distinguishable in the history of the Latin language. (For a slightly different classification and for information supplementary to the present article, see LATIN LITERATURE.) The first is anterior to the beginning of literary culture and may be termed the archaic stage. This period may be regarded as continuing to the time of Ennius (born 239 B.C.). Its monuments consist in the main of inscriptions, some isolated forms have been preserved by the grammarians, and a few characteristic tendencies are revealed by the early dramatists. Among the most ancient relics are the quadrangular cippus of tufa, broken, inscribed with very primitive characters running alternately from left to right and right to left, found in 1899 in the Roman Forum, known as the Forum Stele, or the *Lapis Romuli* (stone of Romulus); the gold fibula of Numasios, found in a tomb at Præneste (Palestrina, see FIBULA PRÆNESTINA); and the vase inscribed with a long "curse," known as the Dueros Inscription, found on the Quirinal Hill in Rome in 1880. (See also COLUMNA ROSTRATA; INSCRIPTIONS, Latin.) Other monuments are the very ancient *Carmina Salaria* preserved by Varro (*De Ling. Lat.*, vii, 26, 27), hymns sung by the Salii (q.v.), the *Carmen Prætrium Arvalium*, dating from the time of the kings and engraved on a bronze tablet of the reign of Numa Pompilius, which was dug up in 1778 on the wall of the grove of the ancient college (see ARVAL BROTHERS); the text of the 12 tables (about 450 B.C.), which is known to us in quotations only and even in these has not been preserved in its integrity (see DECEMVIRI, TWELVE TABLES, LAW OF THE); and the *Scipionum Elogia*, or epitaphs of the Scipios, the earliest of which is perhaps that of L. Cornelius Scipio, son of Barbatus, and consul in 259 B.C. Most of these and many others are given by Wordsworth, *Fragments and Specimens of Early Latin* (Oxford, 1874); Allen, *Remnants of Early Latin* (Boston, 1880); Ritschl, *Præcæ Latinitatis Monumenta Epigraphica* (Berlin, 1862); Egbert, *Latin Inscriptions* (New York, 1896); Diehl, *Inscriptiones Latine* (Bonn, 1912); Cagnat, *Cours d'épigraphie latine* (4th ed., Paris, 1914).

Cicero called the age of the Scipios the age of the true Latinity. Yet modern scholars hold that Latin is full of loan words derived not only from other Italic languages and Etruscan, but also from Greek, in the preliterate period.

The second stage is that of literary culture. Its history may be conveniently traced through three distinct periods, viz. the Anteclassical, the Classical, and the Postclassical; of these periods the middle may be conveniently subdivided into the Golden age and the Silver age.

The first period (240–84 B.C.) includes all the writers from Livius Andronicus to Lucilius (died 103) and is rendered conspicuous by the names of Nævius, Plautus, Ennius, Cato, Terentius, Pacuvius, and Attius, whose language is characterized not only by the frequent use of archaic forms and expressions, but by more or less imitation of Greek models. The Romans had been brought by conquest into close contact with the Greek cities of southern Italy and Sicily, Macedonia and Achaia, and Greek literature had become a subject of study and imitation. This imitative tendency, however, is combined with great originality and vigor in Plautus, and unlimited freedom of thought and expression in Lucilius.

The Golden age (84 B.C.–14 A.D.) is ushered in, as it were, by Varro and Cicero and may be said to come to an end with the death of Livy. The writings of Lucretius, Cæsar, Catullus, Sallust, Vergil, Horace, Propertius, Tibullus, and Ovid lend lustre to this interval and exhibit the literary language in its fullest maturity, its most perfect stage. The standard of prose was set by Cicero and Cæsar, that of poetic art by Vergil. To Cicero in particular the language of prose owed that elaboration and finish which have rendered it a standard of perfection in style for all time and evoked the gratitude of his countrymen towards the man who alone among prose writers had brought to light the utmost capacities of Roman speech. His diction, even in his letters, is an exemplification of the true Roman *urbanitas* and is everywhere, except in his letters (see the next paragraph), a protest against the intrusion into literature of the *sermo plebeius*, the spoken language of the untrained people. But the changes wrought by Vergil are more marked even than those which Cicero accomplished, and his language became the norm in poetry, departures from which were accounted irregularities. Consult Nettleship, *Lectures and Essays*, chap. iv (2d series, Oxford, 1895), and Norden, *Die Antike Kunstprosa* (2d ed., Leipzig, 1909).

Meanwhile the speech of ordinary life may be traced in the plays of Plautus (q.v.), and writings of minor character, such as the accounts of the African and Spanish wars appended to Cæsar's Commentaries, book viii of the *De Bello Gallico*, and the *Bellum Alexandrinum*. To these add many of the letters of Cicero, the *Sermones* of Horace, the writings of Vitruvius, Pompeian inscriptions, and the *Satyricon* of Petronius (q.v.), a work remarkable for the number of examples it affords of the *sermo cotidianus*, the form of Latin in general use in the speech of everyday life. Consult Tyrrell, *Cicero in his Letters*, lxxii–lxxxii (London, 1891), and Cooper, *Word Formation in the Roman Sermo Plebeius* (Boston, 1895).

The Silver age (17–180 A.D.) is marked by the gradual disappearance from literature of simplicity and directness of expression, and a constant striving after effect by means of rhetorical elaboration and ornament. The Silver Latinity is most thoroughly represented in the writings of Tacitus (q.v.). His style and diction are typical and present this stage of the language in the best as well as the truest light. Consult Nettleship, as cited above; Krebs-Schmalz, *Antibarbarus der lateinischen Sprache*, i, 1–16 (7th ed., Basel, 1905); Draeger, *Syntax und Stil des Tacitus* (3d ed., Leipzig, 1882); and the introductions to the editions of the

Dialogus of Tacitus by Peterson (Oxford, 1898) and Gudeman (Boston, 1894; 2d ed. in German, Leipzig, 1914).

But the language, like the Empire itself, was on the decline. The African Latinity of the time of Hadrian (117–138 A.D.) and Fronto (q.v.) shows a great falling off in refinement and general quality, when compared with the Spanish Latinity of the preceding century (the Latin, e.g., of Seneca the philosopher, Lucan, Quintilian, and Martial, all of whom were natives of Spain). Affected archaisms, wearisome repetitions, and Græcisms are especially noticeable, as well as numberless newly created forms and extensive drafts on the plebeian dialect, all of which mark an extreme departure from classical usage. Consult Cooper, *Word Formation in the Roman Sermo Plebeius* (New York, 1895); Knapp, "Archaism in Aulus Gellius," in *Classical Studies in Honour of Henry Drisler*, 126–141 (New York, 1894). In support of the view that there was no distinctive African Latinity, consult Brock, *Studies in Fronto and His Age* (Cambridge, 1911), and chap. iii of the introduction to Purser's edition of the "Cupid and Psyche" episode of the *Metamorphoses of Apuleius* (q.v.) (London, 1910); on the other side consult W. E. Foster, *Studies in Archaism in Aulus Gellius* (New York, 1912). See LATIN LITERATURE, V, *The Middle Empire*.

The death of Fronto (170 A.D.) may be conveniently assigned as the close of the classical period. The postclassical period is commensurate with the third and last stage in the history of the Latin tongue—the stage which exhibits the popular speech (which since the time of Plautus had entered as an insignificant factor into literary expression) as reappearing in literature and as developing into the languages of the Romance period. Thus, the literary language itself was impoverished and disorganized, for its approximation to the vulgar Latin could no longer be checked even by Claudian and other poets of the revival.

This state of things was due in no small measure to the influence of Tertullian (q.v.) and the other fathers of the Christian Church, who introduced the barbarisms of the people into their religious writings. The transformation begun in the second century was completed in the fifth. The events which mainly conduced to it were the transplanting of the seat of the Empire to Constantinople and the invasions of the barbarians. In the East secular literature again found an organ in the Greek language; in the West the Latin language was flooded with foreign forms and idioms through the inroads of the Goths, the Vandals, and the Longobards. In this condition it was termed the *lingua Romana* and distinguished from the *lingua Latina*, which was cultivated only by the learned.

From the *lingua Romana* sprang the eight so-called Romance languages (q.v.) of modern Europe: Portuguese, Spanish, Catalan (in northeastern Spain and Roussillon), Provençal, French, Italian, Rhetoromanic (in the Tirol, Engadine, etc.), and Rumanian or Wallachian. As perpetuated by Christianity, the Latin language continued to live, though in a state of deterioration, long after the total dismemberment of the Roman Empire. It remained, in fact, for centuries the ecclesiastical, political, and official language of Europe.

General Characteristics. Alphabet, pronunciation, and vocabulary.

Alphabet.—The Romans derived their alphabet via Cumæ (q.v.) from the Greeks of southern Italy, who used the Chalcidian, or Western Greek, alphabet, in which the letters differed in many respects from the Ionian, which became later the common alphabet of the Hellenic world. (See ALPHABET, the paragraph preceding the *Bibliography*; GREEK LANGUAGE, *Alphabet and Pronunciation*.) Thus, the Chalcidian alphabet had the forms α, C for Γ; β, D for Δ; γ for Α; Γ for Π; Ρ for Π; Σ for Σ; V for T. It used X for ξ (Eng. *x*) instead of for χ and ψ for χ (Eng. *ch*, hard) instead of for ψ, and had also the digamma F and the Koppa Q; while the aspirate was the full letter H. From this the Romans adopted their original alphabet of 21 letters: ABCDEFZHIKLMN OPQRSTVX. They had no use for the aspirated consonants, Φ = *ph*, Θ = *th*, X = *ch*, and so accepted these letters only as numerals. C occupies the place and has the value of the Greek gamma (Eng. *g*, as in *go*), while the corresponding voiceless sound is represented wholly by K. But in course of time C came to take also the K sound; and K, thus becoming superfluous, was dropped except in a few special words and names, as *Kalendar*, *Kæso*. The fact that C now represented both K and G led to much confusion, and a new letter was invented by a slight modification, so that C was left with the voiceless sound of K, and G was used for the voiced sound, and substituted in the alphabet for Z, which had ceased to be used. A reminiscence of the original sound of C as G is preserved, however, in the abbreviations C. = *Gaius* and CN. = *Gnaeus*. In transcribing Greek words into Latin in the early period, V was used for Y, and S (initial) and SS (medial) for ζ—as in *Burrus* = *Pyrrhus*, *sona* = ζώνη, *atticisso* = ἀττικίζω. It was only in the first century B.C. that the Greek letters Y and Z were actually introduced into Latin, for the better transliteration of Greek names and words. The alphabet then had 23 letters: ABCDEFGHIKLMNOPQRSTVXYZ. The Emperor Claudius (41–54 A.D.) endeavored to add three new letters, to represent the consonantal V (our W), the modified V (as German *ü* with *umlaut*), and the sound PS; but these had only an ephemeral existence. Latin was first written *boustrophedon*, i.e., alternately from right to left and from left to right, as on the primitive stele found in the Forum. The *fibula Praenestina* and the Duenos Inscription show it written from right to left; but later it was always written from left to right. On the Latin alphabet, consult, e.g., Lindsay, *The Latin Language* (Oxford, 1894).

For phonetic changes in Latin, consult any Latin Grammar, e.g., those of Allen and Greenough (Boston, 1903); Gildersleeve-Lodge (ib., 1894); Hale and Buck (ib., 1903); Lane (2d ed., New York, 1903).

Pronunciation.—In the modern teaching of Latin various methods of pronunciation have been employed, as the Roman method, the Continental method, the English method. As Latin has never ceased to be spoken as a learned language, its pronunciation has followed in general the principles governing the language of each country in which it is used. Thus, *Cicero*, as a Latin name, would usually be pronounced in Germany *Tsitsero*, in Italy *Chichero*, in Spain *Thithero*, in France *Siséro*, in England *Siséro*.

The Church of Rome uses a form of pronunciation developed from that of the modern languages during the Middle Ages; and this is essentially the same in all countries, though modified, of course, by the native language of the speaker. This is the so-called Continental pronunciation. The English method, still used in England, consists in pronouncing Latin words precisely as if they were English, each syllable, however, being pronounced as such. The Roman method, an attempt to attain to the real pronunciation of Latin in the time of Cicero, is now almost universally employed, in theory at least, in the universities, colleges, and schools of the United States, within recent years vigorous efforts have been put forth to make it the standard pronunciation also in England. The vowels are pronounced almost as in the Romance languages (Italian, French, Spanish), i.e., long and short A, I, U, close E and O, and open E and O. The diphthongs are Æ (like *i* in *mine*), Œ and OI (as in *soul*), EI (as in *reim*), AU (like *ou* in *out*), EU (sounded separately, with greater stress on the E), UI (a true diphthong, with stress on the first member). The consonants have their English sounds, with the exception that C and G are *always* hard, as in *can* and *go*; R is trilled; S is voiceless; PH, TH, CH are really aspirated consonants. Compare the English “chop-house,” “hot-house,” “block-house.” Latin accent was originally recessive (i.e., on the first syllable), as is shown by such changes in unaccented vowels as *captus*, *acceptus*, afterward *accēptus*, *fācilis* (so in Plautus), later *facīlis*, and such changes in composition as *fūcio*, *cōnfacio*, yielding *cōnficio*, later *conficio*. In the classical period, however, the accent fell always on the penult if the penult was long, if the penult was short, the accent fell on the antepenult. Examples: *occīdo*, I kill; *ōccīdo*, I fall.

On the pronunciation of Latin, consult: Peck, *Latin Pronunciation* (New York, 1894); Lindsay, *The Latin Language* (Oxford, 1894); and especially Seelmann, *Aussprache des Latein* (Heilbronn, 1885).

Vocabulary.—As the language of a rude and hardy race, slow to attain culture, Latin was at first far more limited in vocabulary than Greek. The latter was remarkably rich in terminations that lent themselves to the formation at will of new words, especially for abstract ideas, and its possibilities for the forming of self-explaining compounds were boundless. Thus, biprepositional compounds are common in Greek, they are very rare in Latin, even in plebeian Latin (consult Munro's *Lucretius*, vol. ii, 16–17, 4th ed., London, 1886). This power of making compounds at will was indeed possessed at first by Latin and was probably retained in popular Latin, the Latin of everyday speech; compounds were, however, largely avoided of set purpose by the writers of Latin literature. Herein literary Latin was severely handicapped as against Greek or German. For *ὀψυμαβείς* Horace could or would find nothing better than the awkward periphrasis *seri studiorum* (*Sermones*, i, 10, 21). Simple compounds like *consors*, *benemerens* were numerous. Poetry added many, such as *floriger*, *velivolus*, and the later popular speech increased them considerably. Compare such expressive words as *mulomedicus*, *campidoctor*, *domnædus*, *domnæpræda*. When the Romans began to study the literature and philosophy of the Greeks, they felt sadly the limitations of their own language; but the

genius of a succession of writers culminating in Cicero did much to overcome the difficulty—Greek words were borrowed in large numbers along with the ideas they express. (Consult, e.g., Reiley, *Studies in the Philosophical Terminology of Lucretius and Cicero*, New York, 1909.) The vocabulary of Greek, however, as known to us now, is more extensive than that of Latin—chiefly, however, because we know many Greek dialects, with varying vocabularies. Latin increased its vocabulary materially from other languages besides the Greek: from the Etruscan (cf. *histrio*, actor), Oscan, Celtic (especially war terms, names of animals and vehicles, articles of dress), Syrian, Hebrew, etc.

Bibliography. Among the host of works upon the Latin language in its various phases, in addition to those referred to in the body of this article, the following will be found especially useful:

GRAMMAR The most comprehensive works are those of Draeger, *Historische Syntax der lateinischen Sprache* (2d ed., Leipzig, 1878-81); Smalz, Stolz, etc., *Historische Grammatik der lateinischen Sprache* (ib., 1894-); "Lateinische Grammatik und Stilistik," in Muller's *Handbuch der klassischen Altertumswissenschaft* (4th ed., Munich, 1910); Kühner, *Ausführliche Grammatik* (2d ed., 2 vols., Hanover, 1912-14). Good recent students' grammars in English are those of Roby (1896), Allen and Greenough (1903), Gilder-leave-Lodge (1894), Bennett (1895), Lane (1899), Harkness (1898), and Hale and Buck (Boston, 1903).

DICTIONARIES. A monumental dictionary of the Latin language is in course of preparation in Germany *Thesaurus Linguae Latinae* (Leipzig, Teubner, 1900-). For ordinary use, Harper's *Latin Dictionary* and Georges's *Lateinisch-Deutsches Handwörterbuch* (2 vols., Leipzig, 1879-80) are recommended. For Latin composition, consult Smith, *English-Latin Dictionary* (New York, 1890). For word formation and stylistics, consult Lindsay, *The Latin Language* (Oxford, 1894), Neue-Wagener, *Formenlehre der lateinischen Sprache* (Berlin, 1894-1902), Nägelsbach, *Lateinische Stilistik* (Nuremberg, 1889); Krebs, *Antibarbarus* (Basel, 1886-88). See **DICTIONARY, History** (end).

LATIN LITERATURE. In this article an attempt is made only to trace briefly the origin, development, and decay of Latin literature, with slight notices of the principal authors who aided in its growth and left the stamp of their genius on its progress. For further information regarding the life and works of the various authors, the reader is referred to the individual articles on those authors, in their alphabetical order. For convenience of classification, the story of Latin literature may be divided into six broad periods, of which three fall under the Republic and three under the Empire, as follows:

I. The Preliterary Period (crude beginnings)

II The Early, or Preclassical Period (from the end of the First Punic War, c.240 B.C., to Sulla, c.84 B.C.)

III The Golden Age, or Classical Period (from Sulla, c.84 B.C., to the death of Augustus, A.D. 14).

Of this period there are two divisions:

A The Ciceronian Period (c.84-43 B.C.).

B. The Augustan Age (43 B.C.-14 A.D.).

IV The Silver Age Period of Spanish Latinity (from the death of Augustus, 14 A.D., to the accession of Hadrian, 117 A.D.)

V. The Period of African Latinity—Early Christian Writers (from Hadrian, 117 A.D., to the fourth century).

VI. The Period of Actual Decline (from the early fourth century to the end).

I. The Preliterary Period (crude beginnings). The native character of the Italic peoples, in contrast with that of the Greeks, was relatively unimaginative and practical. The agricultural and pastoral life and the arts of war engrossed all their faculties to the exclusion of literary effort. Only in connection with their simple communal religious rites do we find the dawning of a literary sense, and this of the crudest type. While the Hellenic world, including the powerful Greek cities of southern Italy, was steeped in the poetry of its great epic, lyric, tragic, and comic writers, Rome and central Italy had not risen above the simplest ballads, farces, and mimes. Yet here we must seek the beginnings of Latin literature, the earliest germs of the drama. At the country festivals of the Latin and Oscan villages and towns the native wit and repartee found its expression in simple public shows, where the young men sang, danced, and recited for the edification of the merry-makers. These performances, at first spontaneous, gradually assumed loose plots, in connection with which the actors were free to indulge to the full their spirit of ribaldry, abuse, and fun. They wore masks or painted their faces; their songs and dances were accompanied by the notes of the *tibia*, an instrument similar to the flute, and their dialogue was in the rough Saturnian metre, which from its looseness readily admitted of improvisation. Several varieties of these early farces are mentioned by Latin writers, all of which found their way to Rome, some of them later assumed a really literary character. There were the (*Versus*) *Fescennini* (see **FESCENNINE VERSES**) among the Faliscans just north of Rome—full of abuse and coarse jokes; the (*Fabulae*) *Atellanae* (q.v.) of the Oscan peasants in Campania—uncouth and indelicate, with their comic descriptions of rustic life, gradually assuming a sort of plot with fixed characters, the *Satura*, perhaps native to Latium itself—more dramatic in style than the *Fescennini* and the *Atellanae*—a sort of medley or vaudeville of songs and dances interspersed with stories; and *Mimi* (see **MIME**), probably introduced from Magna Græcia, a sort of farce performed on a rude stage. These, with a few bits of early ritual, such as the "Arval Song" preserved in the record of the *Fratres Arvales* (see **ARVAL BROTHERS**) of the time of Elagabalus, represent the literary level of the Romans before an active and direct contact with Greek culture made them aware of their literary and artistic deficiencies. It may be noted that the traditional account of the development of Latin literature given above has been vigorously challenged by German scholars, especially Jahn and Leo, and by an American scholar, Hendrickson. For a summary and criticism of the views of these scholars, consult Knapp, "The Sceptical Assault on the Roman Tradition Concerning the Dramatic *Satura*," in *American Journal of Philology*, vol. xxxiii (New York, 1912), and id., "Horace, *Epistles*, ii, 1, 139 ff. and Livy, vii, 2," in *Transactions of the American Philological Association*, vol. xliii (Boston, 1912).

II. The Early, or Preclassical Period (from the end of the First Punic War, c.240 B.C., to Sulla, c.84 B.C.) With the end of the

First Punic War and the humiliation of her enemy Carthage, Rome began to enjoy a period of repose, which, with a sense of her growing greatness among nations and the rise of a leisure class, led to a realization of the crudity of life in Rome and a longing to know something of the beauty and culture of Greek life and art. The first attempts at real Latin literature were translations from the Greek into the rough Saturnian metre, the work of a Greek captive, Livius Andronicus (c.290-204 B.C.), brought to Rome after the taking of Tarentum in 272 B.C., and employed as a teacher of Greek. The work in question was a translation of Homer's *Odyssey*, the fragments that happily survive show no high degree of genius and demonstrate clearly that the rough native Latin metre was but ill adapted to express the versatility and lightness of touch of the great original. Andronicus, however, deserves much credit for attempting to employ Latin at all for poetic purposes. The literary successors of Andronicus broke ground along new lines, discarding the Saturnian metre, they attempted the far more difficult task of adapting the Greek metres—iambic, trochaic, dactylic—to the heavy, archaic Latin speech, and instead of mere translations, produced new works based on Greek originals. The real founder of Latin poetry was Gnaeus Nævius (?-c.199 B.C.), a native of Campania, writer of tragedies and comedies. The majority of these were derived from Greek sources; but in two of the tragedies we have examples of the so-called (*Fabula*) *Prætexta*, or strictly Roman tragedy, with plot derived from purely Roman events, and characters in Roman costume, viz., the *Clautidium*, on the victory won at that place by M. Marcellus in 222 B.C., and the *Alimonium Romuli et Remi*, dealing with the legendary events of the founding of Rome. Nævius was especially successful in comedy, but he had the hardihood to attack in his plays the policy of the powerful Metelli, for which he was imprisoned and exiled. Besides his plays he wrote also an epic poem in the Saturnian metre, the *Bellum Pœnicum*, relating the events of the First Punic War. His works long remained popular at Rome; from the few fragments that survive we are able to detect the originality and force of his talent.

A younger contemporary of Nævius was Titus Maccius Plautus (c.254-184 B.C.), whose surpassing importance for us rests on the fact that no fewer than 20 of his plays have survived in whole or in part. Hence, while our estimate of early Roman tragedies, which survive only in fragments, must be based largely on the testimony of ancient writers, that of Roman comedies is drawn from original sources; for besides the 20 plays of Plautus we have also six by his more polished successor, Terence. Plautus, who was not a native of Rome (a like remark may be made of very many of the most important Latin writers), was born in Sarsina, a small town of Umbria, in poor circumstances, but early came to Rome, where, according to the account of Aulus Gellius (q.v.), he secured employment as a stage carpenter. How he got his Latin education is a mystery, especially as he is said to have lost his savings in speculation and in consequence to have been obliged to work in a treadmill. None the less, his literary activity continued unabated until his death. His popularity was very great, and, as is so apt to happen, many plays were foisted on him, in later times, that

were not from his pen. In the Ciceronian age the scholar and critic Varro (see below) selected from the large number that passed under Plautus's name 21 as genuine. His list is nowhere given in any extant Latin author. Since, however, Varro's great authority would be likely to give special currency to the plays selected by him, it is probable, though not demonstrable, that the 21 plays now extant are the plays approved by Varro as genuinely Plautus's. They are the *Amphitruo*, *Asinaria*, *Aulularia*, *Bacchides*, *Captivi*, *Curculio*, *Casina*, *Cistellaria*, *Epidicus*, *Mostellaria*, *Menæchmi*, *Miles Gloriosus*, *Mercator*, *Pseudolus*, *Pœnulus*, *Persa*, *Rudens*, *Stichus*, *Trinummus*, *Truculentus*, and the *Vidularia* that was lost in the Middle Ages.

From the crude beginnings of a Livius Andronicus and the talented but experimental plays of a Nævius to the well-developed art of Plautus is a long step, but it was accomplished within a single generation. This is partly due to the source from which Plautus drew his plots, but largely also to the versatile genius of the man himself and his command of the cumbersome Latin language, as then spoken, which he molded to the iambic *senarii* and *septenarii* with such ease as to create a new Latin poetry that has stood the test of time. Plautus did not invent his plots; his sources were the Greek plays of the New Attic comedy and especially the works (now lost) of Menander, Diphilus, and Philemon—comedies from which the strong personal and political satire of Aristophanes had been perforce wholly expunged. But while the plots and scenes are Greek, and even the titles can often be identified with those of the Greek playwrights, Plautus shows his own originality in all his work. He thoroughly knew his audience, and his plays are brimful of situations and humorous touches that could not fail to appeal to his contemporaries, while still to-day the best of them, where they do not offend modern taste, afford delightful reading and have influenced not a little modern poetry from Shakespeare to Molière. Among the best are the *Amphitruo*, the sole surviving example of the ancient tragic-comedy, an inimitable burlesque of the Alcmena-Amphitruo-Hercules story, which even the genius of Molière could not reproduce; the *Bacchides*, with its masterly plot and characters; the *Captivi*, which, though sentimental, is wholly without female characters; the *Menæchmi*, a charming comedy of errors, the basis of Shakespeare's *Comedy of Errors*; the *Miles Gloriosus*, a brilliant comedy beginning to end, which influenced Molière's *Ralph Roister Doister*; the *Rudens*, a merry romance; and the *Trinummus*, also without female characters, a lively comedy of virtuous middle-class life. These plays represent Plautus at his best; though he wrote for a peculiar and not highly cultured audience, his genius was broad and deep, and he stamped his work with a permanent interest and value. For the influence of Plautus on later literatures, consult Reinhardtsoettner, *Plautus: Spätere Bearbeitungen plautinischer Lustspiele* (Leipzig, 1886).

It was now an age of great names in literary Rome. Quintus Ennius (239-169 B.C.), born at about the same time as Plautus, attained even a greater fame among his countrymen and was honored with the title Father of Roman Poetry. Born at the village of Rudia in Calabria, he fought in the Roman army in Sardinia, where he attracted the notice of M. Porcius Cato, who

brought him to Rome. At Rome, during a long and active life wholly devoted to literary pursuits, Ennius wrote an astonishing number of poetical works, including tragedies, comedies, a great national epic, and miscellanies. But notwithstanding his fame and popularity—Cicero was among his most ardent admirers—only the very barest fragments of his writings have survived, quoted here and there in other authors. His earlier work consisted mainly of translations from the Greek, both tragedies and comedies, notably some of the tragedies of Euripides. His miscellanies, in a variety of metres, received the name *Natura* and were the first of a series of medleys which, by a gradual development, culminated in real *Satires*, as the word is used to-day. (See LUCILIUS; SATIRE.) But the greatest work of Ennius was his *Annales*, in 18 books, an epic in hexameter verse of the chief events in Roman tradition and history from the earliest times to his own. Of course Homer was his model, but the *Annales* fell far short of the Homeric perfection. The clumsy Latin had to be remodeled, as it were, to the easy flow of the Greek metre. The difficulties were of the greatest, but, according to the almost universal judgment of his successors, Ennius' *Annales* was a masterpiece, which only the deeper study of Greek models and the genius of a Vergil could supplant. Ennius' introduction of the hexameter into Latin verse writing, through his use of it in the *Annales*, influenced immensely the whole subsequent history of the Latin language. While the story of Rome was thus being written in verse, we find also an attempt at the elements of history in prose. Doubtless simple accounts of yearly events, of the victories and the defeats, the imposing triumphs, the succession of high civil officers, had long been drawn up in a formal way without any embellishment. (See ANNALS; FASTI.) The first important prose annalist was Q. Fabius Pictor (born about 254 B.C.), who wrote, however, in Greek, under the title of *Ἱστορία*; but his work was early translated into Latin. It covered about the same period as the *Annales* of Ennius, i.e., from the traditional landing of Æneas in Italy to his own time, narrating in some detail the events of the Second Punic War, during which Fabius lived. Both the Greek original and its Latin version are lost, but Polybius and Livy both drew upon him materially for their accounts of the Punic War. His style was crude, and he is censured for his unfairness as an historian (he was partial to the Fabii).

In the long period of construction following the Second Punic War, no name in politics or literature at Rome stands out more brightly than that of M. Porcius Cato (234–149 B.C.), a native of Tusculum, who held all the high offices at Rome and is familiarly known as Cato the Censor. Rigid and conservative, a true type of the stern old Roman, he set his face against the modern spirit of innovation that was steadily strengthening as a result of closer contact with the culture of Greece. Cato was no less great in his private than in his public life; he was a typical Roman gentleman farmer, watching his estate and his servants with an eagle eye; and in his hours of repose from the Senate and the farm he devoted himself to reading and to writing. In spite of his opposition to things Greek, he had no small acquaintance with Greek rhetoric and used that knowledge in teaching (in a manual of rhetoric) and in writing. Ora-

tory was a native talent of the Romans, and Cato was a great orator. Moreover, he was the first Roman to write down and publish his speeches. Of these, no fewer than 150 were extant in Cicero's day; unfortunately we know them only from fragments, but these fragments suffice to show his effective, mordant style. In historical studies, also, Cato was no less active, and the loss of his important work *Origines*, in seven books, is greatly to be deplored. It was the labor of his old age. Far more comprehensive than the bare *Annales* of Fabius Pictor, it was a sort of loose historical narrative, interspersing history proper with researches in the field of geography, politics, and social life and accounts of his personal experiences. The name *Origines* arises from the fact that in the first three books he went far afield and sought to trace the origin not only of Rome, but of all the important tribes of ancient Italy, in so far as the Romans had come into contact with such tribes. We are able to judge of Cato's style and of his painstaking accuracy from the one work of his that has survived entire—*De Agri Cultura*, or *De Re Rustica*, the outcome of his practical experience on the farm. Its naïveté is wholly charming. Cato lays down the rules for the conduct of the farm and the management of slaves, describes the methods of planting and harvesting, the sacrifices to be made and rites to be performed, household receipts and house-keeping, simple medicines, and legal forms for leases and sales. Vergil's debt to Cato in the writing of his *Georgics* (for material, not in matters of style) can well be imagined. For Cato's style as an orator, consult Nettleship, "The Historical Development of Classical Latin Prose," in *Lectures and Essays: Second Series* (Oxford, 1895).

A sketch of the development of Roman literature would not be complete without a brief notice of M. Pacuvius of Brundisium (220–132 B.C.), though all his works are lost. He was a nephew of Ennius, who brought him to Rome and set him on the road to success as a writer of tragedies. The judgment of posterity placed the nephew, as a writer of tragedies, above the uncle. Comedy, in this intermediate period between Plautus and Terence, was represented by Statius Cæcilius (c.219–166 B.C.), an Insubrian Gaul who was probably carried to Rome among the prisoners of war from that region. His comedies were transcriptions from the Greek, less free than those of Plautus, but more original than those of Terence.

At this period Fabius Pictor, the annalist, finds a follower in L. Cincius Alimentus (prætor in 210 B.C.), an officer in the war with Hannibal; but he too wrote his annals in Greek. In the second century B.C., however, there were a number of Latin annalists, whose works, now lost, served more or less as source books for the later historians. Such were L. Cassius Hemina, L. Calpurnius Piso Frugi, L. Cælius Antipater, and Q. Claudius Quadrigarius. (See ANNALS.) The fragments of the historical works of these and other annalists may be found in Peter, *Historicorum Romanorum Reliquiæ* (2 vols., Leipzig, 1870–1914).

After considering so many authors that are hardly more than names to us, it is refreshing to meet again one of whom we can form a judgment from his actual works. This is P. Terentius Afer (c.185–159 B.C.), commonly known as Terence. Not only was Terence not a Roman;

he was not even a native of Italy, but an African by birth. Born after the end of the Second Punic War (218-201 B.C.), though the year of his birth cannot be surely fixed, he was brought to Rome as a slave boy and came into the possession of the wealthy and cultivated senator P. (?) Terentius Lucanus, who, recognizing his ability, gave him education and freedom. There was at this time a little coterie of litterateurs headed by Scipio Africanus Minor and Gaius Lælius (see LÆLIUS, 2), men of the highest rank and the most aristocratic bias, in literature as in politics. The brilliant young playwright was admitted to their society and friendship; his plays were read before them and there subjected to criticism and suggestions before being given to the world. A new element was thus introduced into the nascent Latin literature. In Plautus and Ennius the Greek models are worked over and adapted to the Roman reading public, with a freedom from restriction and a breadth of genius which promises for the Latin literature a great future development almost independent of its Greek origins, or, at least, with wholly national tendencies drawn from the inner life of the Romans themselves. To the Scipios, however, and to Terence, guided by their tendencies, literature was the prerogative of the cultivated nobility and was dependent upon study and learning. The Greek masterpieces were no longer regarded merely as a source of inspiration, but as an end in themselves, a standard by which Latin productions were to be judged alike artistically and metrically. This did not, indeed, hinder the growth of Roman genius, but gave it a new direction. What it gained in grandeur and precision it lost in spontaneity. The same is true of the Latin language itself, which at the hands of a succession of writers culminating in Cicero became that magnificent but restricted and artificial vehicle of thought which we call classical Latin (See LATIN LANGUAGE.) The six plays of Terence, all derived from Greek plays of Menander and his contemporaries, are faultless in their diction and full of dramatic merit. One decidedly misses, none the less, the sprightly, virile, thoroughly Italian genius of a Plautus. All Terence's plays were prepared for representation at the Megalensian festival in honor of *Magna Mater* (see CYBELE) under the stage management of Ambivius Turpio. Their titles are: (1) *Andria* (The Maid of Andros), first performed in 166 B.C.; (2) *Eunuchus*; (3) *Heauton Timorumenos* (The Self-Tormentor), containing the oft-quoted line:

Homosum; humani nil a me alienum puto,

(4) *Phormio*, (5) *Hecyra* (The Mother-in-Law), the least important of all; (6) *Adelphoe* (The Brothers). These are the sum of Terence's published work, and all are preserved. Their author died young, perhaps of a fever contracted in the course of an extended tour in Greece (159 B.C.).

Another member of the Scipionic circle, a man who played a great rôle in the literature of the day, and the loss of whose works is a calamity to us, is Gaius Lucilius (?168-103 B.C.), a native of Suessa Aurunca in Campania, who so defined the scope of application of the *satura* as to deserve the name of Father of Roman Satire. (See SATIRE.) To him was due the popularizing of a kind of poetic miscellany of reflection, criticism, and description, now serious, now pungent, now

witty, that was singularly adapted to the genius and the habits of the Romans. The particular direction which Lucilius gave to satire was that of a systematic criticism of literature and life, which often took the form of parody. Nothing escaped his trenchant pen; politics, morals, society, all things sacred and profane received from him their share of attention. Later Roman writers repeatedly comment on his censoriousness; thanks to this the term "satire" ever since has conveyed the meaning that now attaches to the word. Even his own life and personality were laid bare to his readers. The later satirists, and especially Horace, while frankly criticizing his careless style, willingly admit their debt to Lucilius. Horace, indeed, often follows him closely, as in the piece describing his journey to Brundisium in the company of Mæcenas and his party (*Sermones*, i, 5), which is, in part at least, a copy of Lucilius' account of his own trip to the Straits of Messina. The satires of Lucilius were published in 30 books. The predominant metre was the hexameter. In this he differed from his predecessor Ennius, whose *Satura* mingled trocheas, hexameters, and iambs indifferently, and from Varro (see below), whose "Menippean Satires" were written in both prose and verse. By making the hexameter, the heroic verse of the Greeks and the Romans, the vehicle of satire, he invented a new literary form—the one new literary form invented since Greek days. Formal satire among the Greeks had been written in iambic or choliambic verse, as by Archilochus (q.v.) and Hipponax (q.v.), or in the iambic and trochaic verse of the Old Attic comedy.

To this period belongs the last of the great Latin tragic poets, Lucius Attius (170-94 B.C.), of Pisaurum, the modern Pesaro. As a young man (140 B.C.), he was already putting tragedies on the stage when the aged Pacuvius was still writing. Attius, too, lived to be an old man. Of his many tragedies only some titles and a few fragments survive. His style is marked by such old-fashioned ornament as assonance, alliteration, plays upon words, and archaic forms, which connect him more closely with the age of Ennius than with the literary period immediately following him. With Attius the old character drama came to an end.

The old Latin comedy ended also in this period, with Lucius Afranius, born about 154-144 B.C., author of *fabula togata*, or comedies of Latin life, which achieved a great popularity and were still acted a century after Afranius' death. All are now lost, but we have the titles of many, which serve to show the general character of the plots.

It only remains, in closing this brief sketch of the literature of the Preclassical period, to mention the many orations that were reduced to writing and formed no unimportant part of the literature of the time. This was a branch of intellectual activity in which the Romans excelled. The first published orations of importance were those of Cato (see above), whose eloquence, though rough and rude, was dignified and forceful and touched upon every department of public life. Among Cato's contemporaries in oratory were the younger Scipio and C. Lælius (185-129 B.C.). The advent of the Gracchi, too, formed an epoch in oratory. Their diction was far freer than that of their predecessors. The fame of Tiberius Gracchus (163-133 B.C.) was obscured by that of his brother Gaius Gracchus

(154-121 B.C.), whose most striking characteristic was vehemence. On early Roman oratory, consult: Nettleship, as referred to above in the paragraph on Cato; the introduction to Sandys's edition of Cicero's *Orator* (Cambridge, 1885); the introduction to Wilkins's edition of Cicero, *De Oratore* (2d ed., Oxford, 1888). Meanwhile grammar, rhetoric, philosophy, and law were not without their devotees; but no work of this class has reached us except the treatise on rhetoric known as *Ad Herennium*, which was long wrongly ascribed to Cicero. See CORNFICIUS.

On this earlier period of Latin literature, consult an admirable work, Leo, *Geschichte der römischen Literatur*, vol. i (Berlin, 1913). For the language of the authors, consult Bennett, *Syntax of Early Latin*, vols. i, ii (Boston, 1910-14).

III. The Classical or Golden Age. A. The Ciceronian Period (87-43 B.C.). The Golden age marks the culmination of stylistic perfection in the literature of the Romans. Rome was no longer struggling for a place among the nations, but was seeking to be the dominant world power, and her life was cosmopolitan. At the hands of her masters of prose, Cicero and Caesar, Latin now had cast off the last remnants of archaism and provincialism, and the deep and passionate study of the Greek poets had infused into Latin verse a new, strong, and original beauty. In the earlier part of the Golden age—the Ciceronian period—the newly found national aspirations of the Romans expressed themselves mostly in prose, though great poets, such as Lucretius and Catullus, were not lacking; the later period, or Augustan age, was rendered glorious chiefly by a galaxy of poets, high at the head of which stand Vergil and Horace.

If the life of Rome was now become cosmopolitan, so too the intellectual horizon was immeasurably extended. Every branch of human knowledge was studied with avidity, and, though the scientific method was not yet developed, the scientific spirit was certainly not wanting. There was a thirst for knowledge, especially along historical lines, and the Romans began to study themselves, their glorious past, their religion, and their language. Among the many scholars of the day one stands far above the rest, and in his encyclopædic knowledge and the broad range of his studies reminds us much of the great scholars of the modern classical revival. M. Terentius Varro (116-c.27 B.C.), a native of Reate, devoted a life of prodigious industry to the study of Roman antiquities and literature. When Julius Caesar planned a great library for Rome among his public works, he selected Varro to be its first librarian. The scheme, however, like many others of the great dictator, was never realized, owing to Caesar's death. In 38 B.C. Asinius Pollio established a public library and adorned it with the busts of great literary men. Varro alone, of living authors, was accorded the honor of a place in this gallery. He lived to be almost 90 years of age and during his long life published between 600 and 700 "books" (many books sometimes were included in a single work), on no fewer than 74 different topics, in both prose and verse. The *Satura Menippeæ*, in 150 books, of which fragments remain, were a miscellany in verse and prose, modeled on the works of Menippus of Gadara. The *Antiquitates Rerum Humanarum et Divinarum*, in 41 books, was a repository of the religious and secular

antiquities of the Romans and long remained a standard source of information on those subjects, being quoted frequently by the Christian Fathers down to St. Augustine. It is unfortunately lost. A better fate awaited his *De Lingua Latina Libri XXIV*, of which books v to x are in large part extant and furnish us invaluable information regarding little-known points of Roman antiquities. The etymologies are often ludicrous, but Greek and Roman scholarship was always faulty in this respect. His last work, the product of Varro's old age, *De Re Rustica*, which has come down to us entire, is an essay in the form of a dialogue, marked by a pleasant and readable style, on agriculture, cattle raising, and bird and fish breeding.

The foremost orator of Rome, until his fame was far eclipsed by Cicero, was Q. Hortensius Hortalus (or Ortalus, 114-50 B.C.), who, like many of his predecessors, published his speeches; these, however, are not preserved. He was addicted to the florid style of Asiatic oratory. He and Cicero were good friends, though often opponents in court and in politics. And this brings us to Marcus Tullius Cicero (106-43 B.C.), the greatest name in all Latin literature, as well as the foremost statesman of his time. He was such a master of style that his works have remained a model for succeeding ages. Born at the village of Arpinum, of equestrian rank, he early came to Rome and devoted himself to the study of rhetoric. With remarkable boldness the young man courted the hostility of the dictator Sulla by undertaking and carrying through successfully the defense of Sextus Roscius, of Ameria, on a charge of parricide. The speech is extant. Realizing the need of further study, he spent two years (79-77 B.C.) in Greece and Asia Minor and upon his return to Rome threw himself heartily into the forensic life of the metropolis. He cultivated a style of delivery midway between that of extreme simplicity and that of rhetorical adornment so popular with his contemporaries. Though a *novus homo*—for none of his ancestors had held public office—he became quaestor in 75 B.C., curule ædile in 69, prætor urbanus in 66, and finally, in 63, reached the consulship, the height of his political ambition. As quaestor in Sicily, he became aware of the corrupt and tyrannical rule of Verres (q.v.), the governor of that province, whom he impeached in six masterly orations that, happily, are still preserved. Technically the speeches against Verres consist of (a) the *Divinatio in Q. Cæcilium*, a speech actually delivered in a legal process to determine whether Verres should be prosecuted by Cicero or by a certain Cæcilius, who had claimed the right to prosecute, and (b) an *Actio in C. Verrem*, in five books or parts. The *actio* was never delivered, since, as the result of Cicero's success in the *divinatio*, Verres went into exile. In politics Cicero allied himself with the aristocratic party, at whose head was Cn. Pompey, and was instrumental in securing for him the sovereign command in the East by the Manilian Law in 66 B.C.; his speech in favor of this law, known as *De Imperio Cn. Pompeii*, is among the extant orations. The acme of his oratorical career was attained in the year of his consulship by the orations involved in the suppression of Cataline's conspiracy (63 B.C.). (See CATILINE.) Of the four Catilinarian orations, two were delivered before the Senate and two to the people in the Forum. Nor were his orations confined

wholly to political cases and criminal trials. In 62 B.C. he undertook the defense of the poet Archias (q.v.), a Greek of Heraclea in southern Italy, in his claim to Roman citizenship; and this gave Cicero an opportunity of expressing his keen interest in and love of poetry, of which the speech is a rather declamatory eulogy. In 58 B.C., through the machinations of his political enemies, and particularly of the notorious Clodius Pulcher (q.v.), he was banished from Italy and spent a miserable year in exile at Thessalonica and Dyrrhachium. His return in 57 is marked by four orations, in which he offered thanks for his recall to the Senate and people of Rome and discussed the question of his house, which had been confiscated and destroyed. The following years saw the publication of a number of speeches, which it is not necessary to name here. His last important efforts in oratory were the 14 so-called *Philippics*, violent personal invectives directed against Antonius (Marc Antony), which led to the disgraceful murder of Cicero in 43 B.C. We possess 57 of Cicero's orations, with fragments of 20 more and the titles of 30 that are lost.

It is not only as a consummate orator, however, that Cicero stands high in the world of letters. Indeed, much of his fame rests on his more purely literary work. He was an essayist, a philosopher, a letter writer, and, if not a poet, at least an excellent versifier. His earlier rhetorical and philosophical studies were pursued as an aid to perfection in oratory, but in his riper years his leisure time was devoted to writing, and the number of his literary essays attests his industry and omnivorous reading and his facility with the pen. Already as a young man he wrote an essay known as *Rhetorica*, or *De Inventione*, in two books. It was after his return from exile, however, when the uncertain state of political affairs led him to seek rest and refreshment in study and writing, that he put forth his greatest rhetorical work, the *De Oratore*, perhaps the most careful and finished of all his writings. It is an imaginary dialogue, in three books, between the former orators Crassus and Antonius, supposed to have taken place in 91 B.C. The point of view of Crassus is Cicero's own: Cicero held in practice, as Crassus does in the *De Oratore*, that no training can be too broad or too deep for the orator. Antonius held rather to a narrower, more vocational view of oratorical training. Consult the introduction to Wilkins's edition of Cicero's *De Oratore* (2d ed., Oxford, 1888). It may be noted that Cicero himself was, in fact, probably the best-trained man Rome ever produced; his preparation for his career as orator was extraordinarily wide and deep. See his *Brutus*, 304 ff. Cicero was particularly fond of the dialogue form of essay and used it also in other works, as in the *Brutus de Claris Oratoribus*, published in 46 B.C.—a history of oratory down to his own time, with interesting sketches of almost 200 Roman orators. In the same year appeared his *Orator*, dedicated to M. Brutus. This work sums up Cicero's ideal of what an orator should be; in it Cicero again tries, as he had in his *De Oratore* and in his *Brutus*, to bring his country to adopt, as he had himself, an oratorical style intermediate between the Attic style of Lysias and the Asiatic style of Hortensius. His other rhetorical works, *Partitiones Oratoriae*, *Topica*, and *De Optimo Genere Oratorum*, are of less importance. The philosophical essays are more

numerous. In philosophy Cicero was an eclectic with a decided bias, in the field of speculative philosophy, towards the New Academy (q.v.). In ethics he sympathized with the Stoics and was repelled by the Epicureans. His philosophic works show a fine perfection of style and a wonderful adaptation of the Latin language to the niceties of thought, but display no very profound study and are careless in citation and in the treatment of his authorities, a not unnatural result of the rapidity with which they were written. Many of them belong to the last years of his life, when, sorely distressed by the death of his beloved daughter and barred from public life by the supremacy of Cæsar, he wrote with almost feverish energy. We notice only the more important: 1. *De Re Publica*, a dialogue planned on the lines of Plato's *Republic*, written in 54 B.C. Only about a third of the work is preserved. 2. *De Legibus*, never completed, also based on Plato. Three entire books are extant. 3. *De Finibus Bonorum et Malorum*, in five books (45 B.C.), a discussion of the Greek ideas of good and evil. It is in many respects the finest of Cicero's philosophic essays. 4. *Tusculanæ Disputationes* (45–44 B.C.), imaginary conversations at Cicero's country house at Tusculum, in five books, dedicated to Brutus. 5. *De Natura Deorum* (44 B.C.), an exposition of the value of religion. 6. *Cato Maior de Senectute* (44 B.C.), a very interesting essay in championship of old age. The argument is put into the mouth of Cato Censor, 84 years old at the supposed date of the dialogue, who expounds the beauties of old age to Scipio and Lælius. 7. *Lælius de Amicitia* (44 B.C.), a similar discussion of friendship by Lælius Sapiens (see LÆLIUS, 2) and his two sons-in-law. 8. *De Officiis* (44 B.C.), a discussion of moral and political duties, addressed to Cicero's son Marcus.

The correspondence of Cicero occupies a unique place in Latin literature. We have other Latin letters, but none so spontaneous, so sincerely the expression of the writer's thoughts and moods without regard to the public or the future, none that disclose so completely the intimate thoughts and emotions of a great intellect, none that afford so clear an insight into the real life of the Roman world at one of the most critical and interesting periods of its history. Here we see Cicero the man, in strength and weakness, in success and failure, in public life and with family and friends, as writer and thinker, as wit and connoisseur. Here, too, we may gain an idea of the colloquial Latin of the Roman gentleman, as contrasted with the more elegant but less elastic diction of literature. The best English edition of the letters is that by Tyrrell and Purser (7 vols., London, 1882–1901); good English translations are those by E. S. Schuckburgh (2d ed., 4 vols., ib., 1900–05), and Winstedt, in the Loeb Classical Library (New York, 1912–). On the language of the letters, consult R. Y. Tyrrell, *Cicero in his Letters* (London, 1891).

The greatest genius of the ancient world, the statesman, general, orator, student, and writer C. Julius Cæsar (100–44 B.C.), exercised but a minor influence upon Latin literature as compared with Cicero, yet his *Commentarii de Bello Gallico* has always been a model of Latinity for simplicity and clearness of style, straightforwardness of narrative, and utter absence of self-praise, though the writer was at the same time the hero of his story. The book makes no

pretensions to being an elaborate history; it gives, ostensibly, merely the memoirs of the seven campaigns in Gaul (58-52 B.C.), written by the general in chief during the long idle hours in winter quarters after the crushing of Vercingetorix. Cæsar also prepared an account of the civil wars, which was published after his death from the manuscript draft which he had never carefully revised. His army officers, men of little or no literary ability, followed their gifted leader also into the domain of history. Aulus Hirtius, one of his *Legati*, added an eighth book to the *Commentaries*, and the Alexandrian, African, and Spanish campaigns were written up by other officers. These works are decidedly inferior in style, language, and accuracy to Cæsar's; they are, indeed, sources of our knowledge, rather, of the *sermo plebeius* than of the literary language. (See LATIN LANGUAGE, in the following that on the Golden Age.) The only works of Cæsar that have survived.

A contemporary of Cæsar, but of very inferior importance, was D. Laberius (105-43 B.C.), a Roman *eques*, who raised the *munus*, or farce comedy, to a literary level. We have no more than the titles of his plays. A younger writer in the same line of work, Publilius Syrus, of Antioch (?), was extremely popular for more than a century. The name of T. Lucretius Carus (c.99-55 B.C.) is among the most noted of this epoch, yet, though he was a member of one of Rome's noblest families and a unique poetic and philosophic genius, we know but little of his personal history. He was the author of a profound didactic poem, *De Rerum Natura*, in six books, which is most fortunately preserved and forms our best authority on the philosophic system of the Epicureans. Lucretius himself explains his purpose in writing it, viz., to free the mind from the fear of the gods and of death and to combat the many forms of prevalent superstition by a rational contemplation of nature. As poetry, the work is of a very high order, though varying in quality, for Lucretius died before it was perfected.

Cornelius Nepos (c.99-24 B.C.) was, like his friend Atticus, a man of letters who took no part in the political turmoils of the time. Though he wrote several works of varied character, he is known to us only by the surviving portion of his extensive biographical work *De Viris Illustribus*, in which separate sections (or "books") were devoted to lives of illustrious Greeks and Romans, grouped according to profession, etc. The extant portion gives about 25 lives of Greeks, mostly soldiers or public men, besides lives of Hamilcar, Hannibal, Cato Censor, and Atticus, the friend of Cicero.

In the literary life of Rome at this time there was a group of poets bound together by friendship and by a community of tastes and studies, and all thoroughly steeped in the Greek poetry of the Alexandrian school. (See ALEXANDRIAN AGE; GREEK LITERATURE, *The Alexandrian Age*.) The greatest of these—and indeed one of the greatest in all Latin literature, so far as down-right genius, spontaneity, and sincerity of feeling are concerned—was C. Valerius Catullus (87-c.54 B.C.), a native of Verona, where his father lived and often entertained Julius Cæsar at his house. As a young man he came to Rome and, being of good family, gifted, and of independent means, quickly gained access to the most fashionable society of the capital. Here

he formed the acquaintance of the most prominent persons of the time. A man of strong emotional instincts, of violent love and hate, his poems are pervaded with his own personality. In love, friendship, and politics he shows himself full of zeal and enthusiasm or governed by the most venomous dislikes. He was the last great poet of the free Republic and certainly one of the greatest lyric geniuses that the world has produced.

Besides his shorter lyrics, Catullus wrote also longer poems of quite another character, a "Song to Diana", two *epithalamia*, or marriage songs, one mythological in character, treating of the *Marriage of Peleus and Thetis*, the other in honor of the actual marriage of Manlius and Vinia; a wild study of the Phrygian Attis myth, in the galliambic metre, a translation of Callimachus' *Coma Berenices*, and others. The poems in which he sings of his sorrow for the death of his brother (65, 68, and especially 101), whose tomb he visited in the Troad, of his unhappy journey in Asia Minor (46), and of his joyous return to his beloved Sirmio (31), with the eulogy of his yacht, *Phaselus* (4), are full of subtle charm.

The first Roman to treat historical writing as an art, and thus to distinguish it from personal memoirs and annals, was C. Sallustius Crispus, generally called Sallust in English (86-34 B.C.). After playing an active part in public life, he settled down into private life on his large estate just outside the walls of Rome, to enjoy the wealth he had acquired while proconsul in Africa and to devote himself to literary pursuits. He took Thucydides (q.v.) as his model and followed him closely both in arrangement and style. His works were: (1) *Bellum Catilinæ*, an essay on the famous conspiracy of Catiline in 63 B.C.; (2) *Bellum Jugurthinum*, an essay on the war with Jugurtha (q.v.), King of Numidia, who was conquered by Marius; (3) *Historiæ*, in five books, an account of events from 78 B.C. to 67 B.C. The last is preserved only in fragments.

B. *The Augustan Period* (43 B.C.-14 A.D.).—The overthrow of Antonius at the battle of Actium (31 B.C.) and the gradual establishment of the Empire mark a new order of things in Roman literature. The impulse communicated to poetry in the last days of the Republic was carried, it is true, without interruption into the succeeding age. The poems of Catullus are separated by only a few years from the *Eclogues* of Vergil, but a very different spirit pervades them. The frankness and fearlessness of the earlier poet, which are in harmony with the political activity and freedom of the time in which he wrote, have given place in the later one to a guarded restraint which seeks the approval of a patron or a monarch. In fact, the position of the aristocratic class to which literature had for generations owed its support and encouragement was now changed. No longer free to share in the conduct of national affairs, this class found its chief interests in the affairs of "society" life and expended its energies amid the enervating influences of the court. The state of things had its immediate effect upon literature. Oratory lost its most stirring themes and began to degenerate, becoming ultimately mere declamation; history, fearing to deal unreservedly with the present, fell back upon an artistic elaboration of the past, while poetry, though still on the upward path, tended to become disproportionately

erotic. This period unfolds a list of brilliant writers whose works are conspicuous above those of other periods for their beauty of finish and artistic skill and for a breadth of sympathy which brings them into genuine touch with human life the world over. It saw the perfection of the Latin hexameter verse in the national epic of Vergil, of lyric poetry at the hands of Horace, and of elegiac verse in the works of Tibullus, Propertius, and Ovid. In the domain of prose, Livy did for the story of Rome what Vergil did in verse for the myth of its origin.

P. Vergilius Maro (70-19 B.C.) is the name that is most closely linked with the new order of things ushered in by the Empire. Born at a small town near Mantua in northern Italy, he found himself, when still a young man, deprived of his inherited estate, which, like all the good land of that region, was confiscated after the death of Cæsar and given to the veterans of Octavianus. But Vergil had influential friends, who secured for him from Octavianus a restitution of his property; his gratitude towards the future Emperor was boundless. At this time he began writing his bucolic poems, *Eclogues*, modeled upon the Greek poems of Theocritus; in the first of these the shepherd Tityrus expresses the thought of Vergil himself when he says: *Deus nobis hæc otia fecit* (It is a god who has secured us these comforts). This admiration for Octavianus, born of gratitude, increased with time and personal acquaintance and made of Vergil a devoted adherent of the new order of things and the logical exponent of the new national glory. The 10 *Eclogues* of Vergil are all preserved. He next turned his attention to didactic poetry and wrote four books of *Georgics* at the request of Mæcenas (q.v.), the minister of Octavianus and great patron of literature and learning. The *Georgics*, one of the most charming of the longer Latin poems, treats in an ideal way, and with intimate personal knowledge, agriculture, arboriculture, domestic animals, and beekeeping. Vergil had now taken up his residence at Rome, with frequent sojourns in Campania, and was an esteemed member of the higher literary and cultured circle of the capital and a friend of Augustus. The last years of his life (29-19 B.C.) were devoted to the writing of the *Æneid*, the great national epic, glorifying at the same time Rome and the Julian house and forming the connecting link between the Republic and the Empire. It is an hexameter poem of 12 books, the first six modeled on the *Odyssey*, the last six upon the *Iliad*; the whole describes the adventures of Æneas and his companions from the destruction of Troy to the settlement in Italy leading to the founding of Rome. It was left unfinished at the poet's death in 19 B.C. Indeed, Vergil had made up his mind to destroy the *Æneid*, for failing health warned him that he could never perfect it, but he was compelled by the Emperor and by his friends to save the manuscript, and the work was published by L. Varius Rufus and Plotius Tucca after his death. Besides the greater poetry of Vergil, a number of smaller poems have passed under his name: *Culex* (Gnat), *Ciris*, *Moretum* (Salad), *Copa* (Mine Hostess), and *Catalepton* (a poetic miscellany of 14 pieces). The *Moretum*, *Copa*, and part of the *Catalepton* may really be the work of Vergil.

Closely associated with Vergil, though differing widely from him as a poet, was Q. Horatius Flaccus (65-8 B.C.), who also belonged to the

coterie of authors that gathered about Augustus and his minister Mæcenas. A native of Venusia in Apulia, the son of a freedman who had given him every possible educational advantage, a partisan of Brutus, for whom he fought at the battle of Philippi, then a clerk in the quaestor's office at Rome, Horace gained access to the literary world by his genius, his wit, and his admirable disposition. Vergil introduced him to Mæcenas and thus assured him fame and a competency, for Horace was extremely fond of the quiet country life and passed happy years on the Sabine farm presented to him by his patron. His earliest poems were the *Sermones* (usually mis-called *Satires*), in hexameter verse, in two books, completed respectively in 35 B.C. and 30, and the *Epodes*, completed also in 30 B.C. The *Sermones*, written in a familiar and colloquial style for the delectation of his friends, are modeled upon Lucilius (see above) and are either humorous narratives or mild rebukes of particular moral obliquities and weaknesses. The *Epodes*, which are related to the *Sermones* in subject matter, have more of the character of personal invective. The first three books of the *Odes* were published together, with a dedication to Mæcenas, in 23 B.C. and were followed, after an interval, by the fourth book of *Odes*, written by request and published in 13 B.C. They represent the highest perfection of Latin lyric poetry. It was only by long and patient effort, however, that Horace acquired a mastery over the lyric metres. His verse is no irresistible outburst of genius, but the result of ripe study and a matured power of expression. But, despite the actual labor in the execution, the language of the *Odes* has all the effect of ease; it is brief without being abrupt, subtle without being obscure, and possesses a liveliness which sustains the interest of the reader. The *Epistles*, of which the first book was published in 20 B.C., are full of a genial criticism of life and, with the *Sermones*, furnish the most complete and vivid picture that we have of the condition of Roman society in the Augustan age. The *Carmen Saeculare* (q.v.) was written to be sung at the great Secular Games of 17 B.C. The last work of Horace's life was his poem in literary criticism, *De Arte Poetica*, in reality an epistle addressed to the Pisos, in which he treats lightly but acutely the problems of literary history and the principles of style, especially those relating to the drama.

Of the friends and companions of Vergil and Horace, almost all were writers, but few of their works have survived. Augustus himself (63 B.C.-14 A.D.) wrote both verse and prose. Mæcenas too (69-8 B.C.) indulged in poetic trifles, of which one or two are preserved. Asinius Pollio (76 B.C.-5 A.D.) was the author of tragedies and a history of the civil wars. L. Varius Rufus (74-14 B.C.), one of the editors of the *Æneid*, was an epic poet of great reputation among his contemporaries, as well as a writer of tragedies, one of which was highly praised by Quintilian. Æmilius Macer (died 16 B.C.) wrote didactic poems on hunting, etc., while Cornelius Gallus (70-27 B.C.) devoted himself to the love epigram.

Three of the younger poets of the Augustan period are so similar in temperament and in the subjects on which they wrote, as well as in the choice of the elegiac metre (see *ELEGY*), which they brought to its highest perfection, that they should be classed together here—

Tibullus, Propertius, and Ovid. The first two have many points of resemblance with their far greater predecessor Catullus. Like him, they both wrote love poetry, veiling their sweethearts under fictitious names; like him, too, they died in the very flower of their youth. But the love poems of Catullus are sincere and spontaneous, theirs are more self-conscious and artificial. He wrote wholly from the heart, they more from the head. Propertius, with his wealth of imagery and mythic lore, forms the link between the thoroughly self-centred Tibullus and Ovid, whose best work is wholly free from the personal element. The eldest of the three poets of this group, Albius Tibullus (c.54-19 B.C.), was one of a younger group of literary men that gathered around Valerius Messalla, as Vergil and Horace and their friends formed the circle of Mæcenas, some of the elegies of Tibullus are dedicated to Messalla as patron and friend. The first book, as a whole, treats of his love for Delia, the second of his passion for Nemesis. The language is pure and natural, the versification careful and polished; and, though the themes are but few—ideal love as contrasted with the reality, the charms of country life, the horrors of war—yet they are very often relieved by delightful touches of realism, as in the picture of Messalla, returned from the wars, sitting with his cup of wine in the poet's house in the country and describing his campaigns by marking out camps and battlefields on the table with the tip of his finger dipped in wine. Tibullus did not live to publish his poems; to the two books that are certainly his, his editors added a number of elegiac verses by other writers, notably those of Sulpicia, interesting as the work of a woman, and those of a certain Lygdamus, evidently a pseudonym. Sextus Propertius (c.49-15 B.C.) lacked the restraint and purity of diction of Tibullus, but is far broader in his range of subjects and richer in his wealth of imagery and of mythical allusions. He gave promise of becoming a poet of the first rank, but did not live to mature his genius. Like Catullus and Tibullus, he found his inspiration in love, in his case, for a woman, perhaps Hostia, to whom he writes under the name of Cynthia. The latest in order of time of the elegiac poets is P. Ovidius Naso (43 B.C.-17 or 18 A.D.), a native of Sulmo, but early a resident of Rome, where he wrote love poetry with a strong trend to the purely sensual aspect, as in the *Amores*, the subject of which passed under the fictitious name of Corinna. In the *Heroides* we have an early example of the imaginary love letters, which have lately become so popular. Each of these poems purports to be a letter addressed by a mythical heroine, as Penelope, Briseis, Phædra, Medea, to her absent lover. Not long after this he published his *Ars Amatoria* (also called *Ars Amandi*), containing instructions, couched in poetic form, for lovers of both sexes in the art of retaining their conquests, and his *Remedia Amoris*, on the same general theme, but even coarser in tone. To the middle period of his literary activity belong the *Metamorphoses* and the *Fasts*. The former, written wholly in hexameters, show the breadth of Ovid's versatile poetic genius and form a considerable manual of Greek and Roman mythology. The *Fasts* explain in elegiac couplets the religious significance of each day and month—a sort of commentary on the calendar. The work was planned in 12 parts, with a book dedicated to each month, but only the first six were ever

completed, and these were not published until after Ovid's death. While still engaged in writing the *Metamorphoses*, Ovid was overtaken with sudden disaster that wrecked his life and reduced him to desolation and despair. Exactly what caused his downfall is, and probably will always remain, a mystery. Towards the end of 8 B.C. he was suddenly banished from Rome by Imperial orders and commanded to live in the far-distant and wholly uncongenial village of Tomi, on the shores of the Black Sea. Here he miserably passed his remaining years, yearning for Rome and hoping in vain for a reprieve. His poetry now became melancholy; the *Tristia*, in five books, and the *Ibis*, in one book, give but too vivid a picture of his lonely wretchedness. The title *Ibis* was borrowed from that of a famous lampooning poem by Callimachus (q.v.). By a curious coincidence the first word of Ovid's poem is the Latin word *Ibis* (you shall go). Ovid died in A.D. 17, a broken-hearted old man.

The one great prose writer of the Augustan period was Titus Livius (59 B.C.-17 A.D.), of Patavium (Padua), author of a history of Rome (*Ab Urbe Condita Libri*), from the arrival of Æneas in Italy down to Livy's own times. This great work was in 142 books, carrying the story as far as the death of Drusus in 9 B.C. (See DRUSUS, 3.) Livy probably intended to complete 150 books; if so, death prevented the consummation of his plan. Only about a quarter of the work (i.e., books i-x, xxi-xlv) is extant, but we have *pericopæ*, or *outlines*, of the rest. Livy has fairly been called the most eloquent of historians, but he is wholly uncritical. He troubled himself little with original research and had small knowledge of constitutional or military affairs, and his idea of the philosophy of history and of the significance of cause and effect was of the vaguest possible sort. It is, however, decidedly erroneous to say, as Macaulay did, that Livy had no regard for truth. It is but fair to him to point out that he was well aware how unsatisfactory even the best available authorities were. (Consult Morgan, *Addresses and Essays*, New York, 1910.) In consequence he not unnaturally contented himself at times with presenting the current history in adequately artistic form. But in the art of expression and of telling a story in a fascinating style he surpasses all his countrymen. His language is unconventional, though carefully chosen, and forms the first transition to the so-called "silver" Latinity.

Among the minor writers of this epoch several deserve a brief mention. Pompeius Trogus wrote a universal history, with the title *Historia Philippicæ*, in 44 books. This work was abridged in the second century by Justinus, and the abridgment, which is extant, caused the loss of the original. The learned M. Verrius Flaccus met the same fate as Trogus and for the same reason. His encyclopædic lexicon entitled *De Verborum Significatu* was abridged by Sextus Pompeius Festus in the second century, and this in its turn by Paulus Diaconus in the time of Charlemagne. All of the original work and most of the first abridgment are therefore lost. C. Julius Hyginus (c.64 B.C.-17 A.D.), another learned writer, was a freedman of Augustus, who placed him in charge of the Palatine Library. His works treated many subjects, literary and scientific, but all are lost except two books of *Fabulæ* (a school textbook of mythology) and four on astrology; even these, in the

form in which we have them, are not certainly from his hand. (See *HYGINUS*.) We are more fortunate in the case of the architect Vitruvius Pollio, whose work *De Architectura*, in 10 books, is of the greatest value to students of classical architecture, but, like all the lesser works just mentioned, is quite without real literary merit.

IV. *The Silver Age* (Postclassical Period; Spanish Latinity, 17 B.C.–c.130 A.D.). This period may be divided conveniently into three parts: (a) the Claudian era; (b) the Flavian era; (c) the era of literary revival, comprising the reigns of Nerva and Trajan and part of that of Hadrian. The Republican age is now definitely and admittedly at an end, and society, and with it literature, enters upon a new phase. The writers whose works survive become vastly more numerous, but are generally of secondary importance and can be treated only briefly. As several of them in the first century (the two Senecas, Pomponius Mela, Lucan, Columella, Quintilian, Martial) were of Spanish origin, the whole period is often spoken of as that of Spanish Latinity. The accession of Tiberius (14–37 A.D.) marked the growth of despotic power, which crushed all aspirations after freedom and deadened intellectual activity. The Emperor, though an author himself, his literature for political reasons, and men did not dare either to praise the past or record the deeds of the present. (a) L. Annaeus Seneca, the elder (c.54 B.C.–39 A.D.), of Corduba in Spain, really belongs to the end of the Republic, but as his extant works, written towards the end of his life, fall under the Empire, he is best considered here. He was an orator of repute, a great admirer of Cicero, and a rhetorician of distinction. A single volume of *Suasoriae* (school declamations) and 10 books of *Controversiae* (school debates) remain to us in a mutilated form. The brave but unfortunate Prince Germanicus (15 B.C.–19 A.D.), the Emperor's nephew, translated into Latin hexameters the *Phaenomena* of Aratus. C. Velleius Paterculus, an old soldier and a great admirer of Tiberius, published in 30 A.D. a compendium of Roman history, mostly of the Empire, in two books. Valerius Maximus dedicated to Tiberius his *Factorum et Dictorum Memorabilium Libri IX*, a large collection of historical anecdotes. A. Cornelius Celsus was the author of an encyclopaedic work on very diverse subjects, of which eight books on medicine (*De Medicina*) have survived and form our best exposition of the medical science of the Romans. Finally, the Emperor's freedman Phaedrus adapted in Latin *senarii* the fables of Aesop, with many additions of his own. His animals, however, have not the lifelike character of those of Aesop nor the wisdom claimed for them by the author himself. In the reigns of Caligula (37–41 A.D.) and Claudius (41–54 A.D.) literature made no important acquisitions, although grammatical studies and jurisprudence continued to be cultivated. Perhaps to this period belong the *Chorographia* of Pomponius Mela, a geography of the ancient world as known at this time, and the *Historiarum Alexandri Magni Libri X* of Q. Curtius Rufus (see CURTIUS), a somewhat dry but not altogether uninteresting account of the conquests of Alexander the Great. Claudius' court physician, Scribonius Largus, published about 47 A.D. a book of useful medical prescriptions, which is extant. Claudius himself was an industrious writer on Etruscan and Roman an-

tiquities, but we possess only part of one of his speeches before the Senate, discovered in 1524 at Lyons, engraved on bronze tablets, the substance of which is quoted by Tacitus (*Ann.*, xi, 25). The accession of Nero (54–68 A.D.) marked a revival in letters. The greatest writer was L. Annaeus Seneca, the philosopher (4 B.C.–65 A.D.), son of the elder Seneca, mentioned above. Seneca's facility in composition resembled that of Ovid. His philosophy, which was based on that of the Stoics, was more cosmopolitan than Roman and discloses a loftiness of moral view with which the weaknesses of his own life were scarcely in keeping. His style is ornamental and forced, and his sentences disconnected, epigrammatic, and adapted to win applause at recitations. Seneca wrote on a great variety of subjects, both in prose and verse. The most important of his extant works are his philosophical discourses on such subjects as Anger, Clemency, Consolation, the Shortness of Life, etc., and 20 books of "Moral Letters" (*Epistulae Morales*), 124 in all, addressed to his friend Lucilius. He was the author, also, of tragedies, with subjects chiefly drawn from Euripides, of which the best known is the *Medea*. His satirical pamphlet, *Apocolocyntosis Divi Claudii*, written in derision of Claudius after the latter's death, is unique in Latin literature.

Seneca's nephew, M. Annaeus Lucanus (39–65 A.D.), was also imbued with the Stoic philosophy. Though a young man when he was put to death by Nero for his part in Piso's conspiracy, he had already gained a high place as a poet by his epic *Pharsalia*, an account of the civil war between Pompeius and Cæsar, which is to be ranked as a work of genius, though it abounds in exaggeration, wearisome digression, and misplaced learning. Lucan's intimate friend, the poet A. Persius Flaccus (34–62 A.D.), is a far more interesting personality; though he died in his twenties, he left six *Satires* that will always be read with interest and admiration. Persius was full of youthful moral enthusiasm—quite in contrast with his contemporary Petronius Arbiter, who, if he was really, as seems probable, the *arbiter elegantiarum* of Nero, was compelled to put an end to his life in 66 A.D. His *Satiricon* (sc. *Libri*) is a vivacious and well-written satirical romance, the only work of its kind that is left from Roman literature. We possess almost entire the part entitled *Cena Trimalchionis*, the description of a dinner given at the house of Trimalchio, a rich but vulgar upstart. The various characters are cleverly drawn, and the language and conversation of each is in strict keeping with his station. It remains in this period merely to mention L. Junius Moderatus Columella, author of an extensive agricultural work *De Re Rustica*.

(b) The accession of Vespasian (69 A.D.) marked the appearance in literature of a soberer style than was possible amid the frivolous glitter of Nero's court. The greatest writer of this reign was C. Plinius Secundus, or Pliny the Elder (23–79 A.D.), who perished, as a result of his spirit of scientific investigation, in the great eruption of Vesuvius that destroyed Pompeii. He was a voluminous writer, but we have only his extensive storehouse of learning entitled *Historia Naturalis*, which, though mainly a compilation, represents a vast amount of laborious research. It was in the reign of Vespasian also that C. Valerius Flaccus wrote the first part of his poem *Argonautica*—an imitation of the

Greek work of Apollonius Rhodius though most of it was published in later years. The writers of Domitian's reign (81-96 A.D.) were more numerous. There were two epic poets of secondary importance, Silius Italicus (c.25-101 A.D.) and P. Papinius Statius (c.40-96 A.D.). The former was author of a description of the Second Punic War (*Punica*); the latter wrote two mythological poems, *Thebais* and *Achilleis*, and a collection of shorter poems entitled *Silvæ*. All are wanting in originality and inspiration. Not so with the *Epigrams* of M. Valerius Martialis (c.40-104 A.D.), the court poet of Domitian. His 15 books possess greater interest for us than any other works of the period, for the insight they give into the social life of the day. All the frivolity, license, immorality, and servility of the age of Domitian are mirrored in these little sketches. They are remarkable also for their consummate wit and their polish of form and diction. Martial is in one sense the creator of the epigram, for it was he who first gave to it the sting which it now carries. The only prose writer of first importance was M. Fabius Quintilianus (35-95 A.D.), who, after a long and useful life in Rome as a teacher of rhetoric, spent his declining years in the preparation of a great work on the "Training of the Orator" (*Institutio Oratoria*), which has always remained a classic. With ripe judgment founded on experience, Quintilian traces from childhood up the proper education of the future orator. The tenth book, which is devoted to literary criticism and contains a comparison of Greek and Roman writers in various fields, is of especial interest to-day.

Aside from literature as such, perhaps the most scientific writer of all the Romans was Sextus Julius Frontinus (c.40-103 A.D.), who made an honorable record both at Rome, as aqueduct commissioner, and in the field, as governor of Britain. The results of these very diverse experiences are summed up in his *De Aquis Urbis Romæ*, an extensive report on the Roman water supply, and *Strategematon Libri III*, a practical manual of military art.

(c) But it was in the reigns of Nerva and Trajan (96-117 A.D.) that the literary talent of the Empire put forth its noblest efforts. The long restraint to which liberal-minded and independent men had been forced to submit under the preceding reigns was finally broken, and now at last, as under the Republic, they were able freely to express their real feelings. They were naturally embittered by the long enforced silence and by the vivid memory of hateful conditions, but nothing could be nobler than the grim moralizing of a Juvenal and a Tacitus. They do, indeed, draw a sad picture of a corrupt society and an incredibly awful state of public affairs, but when allowance has been made for their bias, they amply show that integrity and virtue could flourish under the most degrading conditions. Cornelius Tacitus (c.55-120 A.D.) occupies a unique place in Roman literature. A keen critic of men and things, he is also an able word artist and the creator of a trenchant style of Latin that no writer ever succeeded in imitating. We are indebted to his *Annales* and his *Historiæ* for our best information of the events of the principal reigns of the first century. His earlier works, the *Germania*, an account of that then little-known country, and the *Agriicola*, a charming and sympathetic biography of his father-in-law, show alike the development of his

literary genius and his own rare qualities of heart and head. The *Dialoqus de Oratoribus* was his earliest work, written while he was still under the influence of Ciceronian studies. The *Satires* of his contemporary D. Junius Juvenalis (c.60-140 A.D.) present in a strong light the moral degradation of Roman society and the righteous indignation of the better-minded men. Juvenal is a true satirist, though lacking in the higher qualities that make a poet. Pliny the Younger, C. Plinius Cæcilius Secundus (62-c.113 A.D.), nephew of Pliny the Elder, has left a collection of delightful *Letters*, which modify for us the harsh picture of society drawn by Juvenal and Tacitus. Those addressed to Trajan, with the Emperor's replies (consult book x), are especially interesting as showing the feeling in regard to the growing sect of the Christians (Consult *Letters*, 96-97.)

V. The Middle Empire (second century, African Latinity, Early Christian Writers, 117-211 A.D.). With Tacitus, Juvenal, and Pliny, Roman literature as an expression of lofty and original genius may be said to have come to an end. Men of ability and learning continued to write, but in general their interest to us is not a purely literary one; it is due to the subjects of which they wrote and the times in which they lived. As the Spanish writers played a prominent part in the literary history of the last period, so in this we find that many of the greatest names are those of Africans (as Fronto, Apuleius, Tertullian), hence it is often designated as the period of African Latinity. See LATIN LANGUAGE, the third paragraph before the division entitled *General Characteristics*.

Under Hadrian (117-138 A.D.) flourished C. Suetonius Tranquillus (c.75-160), author of the *Lives of the Cæsars*, full of interesting bits of information and gossip, with a strong preponderance of scandal; and of a collection of slight biographies of illustrious men, of which we have many valuable fragments. To this period, too, belongs the abridged history of Florus, a work of very subordinate importance. The greatest names of the reign of Antonius Pius (138-161 A.D.) are those of M. Cornelius Fronto (c.100-175 A.D.), whose correspondence with his Imperial pupil Marcus Aurelius is interesting, if monotonous and pedantic; and of Gaius, the jurist (c.110-180 A.D.), whose *Institutiones*, a manual of Roman law, is in great part extant. More interesting are the writers of M. Aurelius' reign (161-180 A.D.). Aulus Gellius laboriously collected all kinds of literary, philological, and antiquarian information, which he published without order or system under the title *Noctes Atticæ*. To us, of course, the work is a valuable storehouse of information, a treasury of curious facts and theories. The best representative of the African-Roman writing is L. Apuleius (born c.125 A.D.), the most original writer since Tacitus. He studied at Carthage, traveled extensively in Greece, practiced law at Rome, and then returned to Africa, where he delivered public lectures on rhetoric and philosophy. His chief work was a long romance entitled *Metamorphoses*, with a fantastic plot. It narrates the strange adventures of a certain Lucius, who was transformed into a donkey. The hand of the rhetorician is visible all through the book. The best-known portion is the well-written story of Cupid and Psyche. The other extant works of Apuleius are of less interest: *Apologia*, his defense on a charge of witchcraft; *Florida*, selec-

tions from his public lectures; and a number of philosophical essays. To this period we owe the earliest literary work of Latin Christianity, the *Octavius* of M. Minucius Felix, a well-written exposition, in dialogue form, of the current arguments against the Christian faith, with a well-sustained refutation.

Under the rule of Commodus (180-192) and Severus (193-211) we have only one writer of importance—Tertullian, of Carthage (c.150-230 A.D.), the fiery defender of Christianity whose sharp attacks on the pagan life and worship must have brought many into the Christian fold. The Bible was already translated into Latin; the oldest versions, rough and literal, are known as *Itala*. In Rome the celebrated jurist Papinian was writing extensively on his own special topic—law—and Acrio was preparing commentaries on Terence and on Horace.

VI. Period of Actual Decline (third to sixth centuries). The writers of the third century are neither numerous nor important from a literary point of view. In the field of law Domitius Ulpianus put forth numerous works under Caracalla (211-217 A.D.) which form the basis of the great *Digest* of Roman law prepared later by order of the Byzantine Emperor Justinian. The grammatical works of Censorinus belong to the same period. Only his *De Die Natali* has survived, a compilation largely from Suetonius, containing some curious information of value to us. The literary activity of St. Cyprian, Bishop of Carthage (c.200-258 A.D.), falls under later reigns. He was a voluminous writer, thoroughly orthodox in his faith, we gain from his works, especially from his *Epistulae*, no little insight into the condition of the various churches of the time. The Christian poet Commodianus occupies a curious place in the story of Latin versification. He is the precursor of the purely accental verse of the early Latin hymns. He writes in hexameters; but the sense of quantity is largely lost, and the lines must be read partly quantitatively, partly by the prose accent. C. Julius Solinus, a compiler of learned information, but without critical judgment or taste, wrote his *Collectanea Rerum Memorabilium* shortly after the middle of the third century. It was an age of devalitized paganism and often very crude Christianity, and many a recent convert "rushed into print" before he really understood the doctrines that he proclaimed. Such was the rhetorician Arnobius, author of a defense of Christianity with the title *Adversus Nationes*. Arnobius' pupil, the rhetorician Lactantius, was of a far higher type of mind; indeed, we should call him a surpassing genius in contrast with the intellectual level of his time. Though a zealous Christian, he loved the pagan writers, and his style is as Ciceronian as was possible in the third century. A number of pagan writers of the time of Diocletian and Constantine (Spartianus, Capitolinus, Trebellius Pollio, Gallicanus, Vopiscus, Lampridius) are grouped under the general name *Scriptores Historiae Augustae* (See AUGUSTAN HISTORY) and have left for us popular accounts of the emperors of the second and third centuries. In contrast with the purely scholastic work of the pagans and the constructive and propagandist writings of the Christian writers, we have now also a poem of real genius, wholly pagan in tone and by an unknown author—the *Pervigilium Veneris*, a charming song in praise of springtime and love.

In the fourth century Christianity became the recognized state religion, but paganism could not be stamped out by law, and many of the most noted writers were still pagans. Thus, the nobleman Avienus as a poet followed the classical models in his translations from the Greek and in his epigrams; and if his pagan poetry is overweighted with rhetoric, that was the fault of his time. D. Magnus Ausonius (c.310-395 A.D.) combined a love of the old Roman literature and a deep knowledge of Latin poetry with skill in versification and neatness and grace of expression. His *Mosella* is one of the most perfect gems in the Latin language. The representative Christian poet was Prudentius (348-c.410 A.D.), who adds to perfect versification originality of subject, for he treats of wholly Christian themes, as the martyrdom of the saints, etc. The last struggle of philosophic—or, rather, reminiscent—paganism is splendidly depicted in the writings of Symmachus (c.345-405 A.D.), one of the most attractive characters in the whole range of Latin literature. The two great theologians of the century are Ambrosius (St. Ambrose; c.340-397 A.D.), Bishop of Milan, and Hieronymus (St. Jerome; 331-420 A.D.). History was represented by Aurelius Victor, who published in 360 A.D. a history of the Cæsars; by Eutropius, author of an *Epitome of Roman History*; and—most important—by Ammianus Marcellinus, the last Latin historian of ancient Rome, a zealous imitator of Tacitus, of whose *Historiae* he intended his own work to be a continuation. A few writers on learned and technical subjects should also be noted: the grammarians Donatus (whose *Ars Grammatica* became the textbook of the Middle Ages), Charisius, and Diomedes, the lexicographer Nonius Marcellus; the Vergilian commentator Servius; the astrologer Firmicus Maternus; and the military writer Vegetius. The passage from the fourth to the fifth century marks the era of the last of the great pagan poets, Claudius Claudianus, author of epic poems and epigrams of high classical finish, often reminding one of Statius. This was the age, also, of St. Augustine (354-430 A.D.), Bishop of Hippo in Africa, author of very numerous theological and moral works, notably the *Confessiones* and the *De Civitate Dei*. Macrobius, while still a pagan, wrote the *Saturnalia*, a mass of notes in literary criticism and antiquarian lore in the style of Gellius' *Noctes Atticae*, dealing especially with the criticism of Vergil, and a commentary on Cicero's *Somnium Scipionis*. The Spanish priest Orosius was the author of a History of the World, from the Creation to 417 A.D., written from the Christian standpoint. Under Theodosius, in 438 A.D., the Imperial edicts from the time of Constantine were collected in the *Codex Theodosianus*. The last great names of the fifth century were Apollinaris Sidonius and Dracontius. The former (c.430-480 A.D.), as Bishop of Clermont in France, published poems and letters; the latter, a Carthaginian, wrote a long didactic poem *De Laudibus Dei*. In the sixth century the ancient Latin literature comes to an end with the great grammar, *Institutiones Grammaticae*, of Priscianus; the philosophical works of Boethius (died 524 A.D.), especially his *De Consolatione Philosophiae*, composed in prison; and the *World-Chronicle* and lesser works of Cassiodorus.

Bibliography. The standard works of reference on Latin literature are Teuffel, *Geschichte*

der römischen Litteratur (5th ed. by Schwabe, Leipzig, 1890; with Eng. trans. by Warr, *History of Roman Literature*, London, 1891-92, still of great value; 6th ed. by Kroll, Skutsch, etc., vols. ii, iii, ib., 1910-13, not yet translated and less good than the 5th ed. because the attempt to control the literature, which is the great merit of the 5th ed., has been abandoned), and Schanz, "Geschichte der römischen Litteratur," in Müller, *Handbuch der klassischen Altertumswissenschaft* (in part 2d ed., but mainly 3d ed., Munich, 1905-14). Schanz's work is by far the most complete and the best. Valuable, but far briefer, are the treatment of Latin literature by Leo and Norden, in *Die griechische und lateinische Literatur und Sprache*, by various hands (3d ed., Leipzig, 1912), and by Norden and Wendland in Gercke and Norden, *Einleitung in die Altertumswissenschaft* (2d ed., ib., 1913). The best modern manuals are those of Simcox (2 vols., New York, 1883), Crutwell (ib., 1888), Mackail (ib., 1895), and Pichon (Paris, 1898); Duff, *A Literary History of Rome* (London, 1909); Leo, *Geschichte der römischen Literatur; Erster Band: Die archaische Literatur* (Berlin, 1913). See also Mayor, *Guide to the Choice of Classical Books* (London, 1898). For suggestive essays on phases of Latin literature, see, besides the works cited in the body of this article, Nisard, *Etudes de la poésie latine et Essais sur les poètes latins de la décadence* (Paris, 1875), Sellar, *Roman Poets of the Republic and Roman Poets of the Augustan Age* (Oxford, 1892); Tyrrell, *Latin Poetry* (Boston, 1893), Nettleship, *Lectures and Essays*, two series (Oxford, 1885, 1895); Moulton, *The Ancient Classical Drama* (2d ed., ib., 1898); Fowler, *Roman Literature* (New York, 1903); Butler, *Post-Augustan Poetry* (Oxford, 1909); Plessis, *La poésie latine* (Paris, 1909); Michaut, *Histoire de la comédie romaine* (ib., 1912). See ANTHOLOGY.

LATIN QUARTER. See QUARTIER LATIN.

LATIN UNION. By the monetary convention of Dec. 23, 1865, France, Belgium, Switzerland, and Italy entered into a treaty for the uniform regulation of coinage in these states. This association of states in a common monetary policy was known as the Latin Union. The French monetary law of 1803 had established both gold and silver as full legal-tender coinage. Under its provisions the two and five franc pieces were exact multiples in weight of the one-franc coin. During the early bimetallic experience the pressure for the exportation of coin fell chiefly upon gold and did not therefore greatly disturb the money circulation of every day. But with the discovery of gold in California and Australia gold fell relatively to silver, and large quantities of silver were exported, as gold was substituted for it in the monetary circulation. The coins first selected for export were naturally the larger five-franc pieces, but as time progressed the smaller coins were drawn upon and the people suffered great inconvenience from the diminution in the volume of small coins. In 1861 a French commission appointed to inquire into the state of the coinage reported in favor of making the small coins tokens, as had been done in a similar situation in the United States in 1853. This proposal was carried out by a law of 1864, which, without reducing the weight of the smaller silver coins, changed the alloy from 0.900 fine to 0.835 fine. This action would have solved the domestic diffi-

culties of French coinage had not perplexities arisen over the acceptance of foreign coin. Belgium, Italy, and Switzerland each had a monetary system based on that of France, and their coins, being equal in weight and fineness, had always been freely accepted in France, as the French coins circulated freely in those countries. Urged by the same fear of loss through the minor coinage, Switzerland had reduced the fineness of the coins to 0.800 and Italy to 0.835 before France acted, while Belgium had taken no steps in the matter. The diversity of value, and the fact that these coins were no longer of full weight and readily convertible into standard coins of the countries having the same system, interfered with their international circulation.

It was primarily for the removal of these difficulties that the monetary convention of 1865 was convoked by France, at the suggestion of Belgium. In the convention Belgium and Switzerland proposed the adoption by the contracting parties of the gold standard, with coinage of all silver pieces as tokens, under rules to be agreed upon. France was not ready for this step and insisted upon the retention of the silver five-franc piece at its old valuation and as full legal tender. The result was a treaty prescribing a uniform weight and fineness for the gold coins and the five-franc silver coin and providing that such coins should have unlimited legal tender in the countries issuing them, and that coins issued by one of the contracting states should be receivable in any quantity which might be offered in payment of public dues in any of the states which were parties to the treaty. So far as the weight and fineness of the coins were concerned, this provision made no change in existing conditions, though the clause providing for the acceptance by any of the states enhanced the value of the coin.

Far more important were the provisions relating to the minor silver coins (2 and 1 franc, 50 and 20 centimes). It was provided that these coins should have a uniform fineness of 0.835, and that they should not be issued by the several countries in excess of six francs per head of the population, and that in the states in which they were issued they should be legal tender to the extent of 50 francs in one payment. The issuing states were required to receive these coins in any amounts in which they might be presented, while each state agreed to accept at the public treasuries such coins issued by the other contracting states in payments not exceeding 100 francs. This defines the scope of the Latin Union and summarizes the conditions which insure the international circulation of the coins. For while it is true that no obligation is imposed upon citizens of France to accept the minor coins of Italy, e.g., yet in effect the practice of the governments controls that of individuals. The weak point in the treaty was the retention of the five-franc silver piece on a par with the gold coinage. If at the time the inconsistency of this privileged position for the five-franc piece attracted little attention, it was perhaps because with the prevailing price of silver there was little probability of its being brought to the mint for coinage, and the question may have appeared an academic rather than a practical one. It is curious to observe that one year after the treaty went into effect the price of silver had fallen sufficiently to make its coinage profitable; so that had no change been made in the law the dearth of small coin

would have been remedied without any legal enactments or treaties. But as the coinage of the minor coins was reserved to the government, it followed that when conditions favored the coinage of silver on private account the mints of the contracting states began to turn out five-franc coins at a rate which in a few years threatened the circulation of gold. During the struggle between Prussia and France the French mints were inactive, but those of Belgium and Italy developed a remarkable activity. France found herself flooded with Belgian and Italian coins after the return of peace. Accordingly measures were taken to check the coinage of silver. By agreement of 1874 the quantities to be coined in the several states were limited, and this agreement was renewed in 1875 and 1876. In the meantime the several states had passed laws authorizing the suspension of coinage of the five-franc piece, and by 1877 it had practically ceased. By this action the countries of the Latin Union definitely adopted gold as the standard of value, though their circulation is charged with a considerable quantity of full legal-tender silver which must be kept at a par with gold. The fact that Belgium in the early seventies issued silver far beyond her needs, and far beyond her ability to redeem at the present value of silver, has had much to do with the successive prolongations of the Latin Union beyond the term of years for which it was originally created. While France has directed the policy of the union with great success, she has had to bear in a measure the burden of her weaker partners.

At the time the union was founded it was deemed possible that other nations would associate themselves with the states composing it, thus preparing the way for an international coinage, but this expectation has proved to be illusory.

Consult: Bamberger, *Die Schicksale des lateinischen Münzbundes* (Berlin, 1885); R. H. I. Palgrave, *Dictionary of Political Economy*, vol. ii (New York, 1900); H. P. Willis, *History of the Latin Monetary Union* (Washington, 1901); Arnauné, *La Monnaie, le crédit et le change* (2d ed., Paris, 1902).

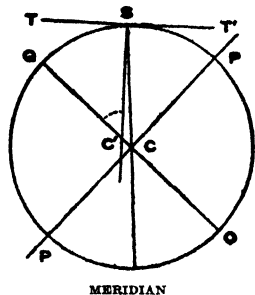
LATINUS. In Hesiod (q.v.), son of Ulysses (q.v.) and Circe, and King of the Tyrsenians. In Vergil's *Æneid* (vii-xii) we find a legendary King of Latium, son of Faunus and the nymph Marica, and father of Lavinia, wife of Æneas. When Æneas reached Italy, Latinus welcomed him and offered him his daughter in marriage. Turnus (q.v.), to whom she had been betrothed, roused the peoples of Italy to war against Æneas. Æneas was victorious, married Lavinia, and, on the death of Latinus, succeeded to the throne of Latium. In earlier writers, Greek and Latin, the story of Latinus assumes many other forms, especially after the legend began to connect Rome with fugitives from Troy. Originally Latinus is the eponym of the Latin race. Consult the article "Latinus," in Lübker, *Reallexikon des klassischen Altertums* (8th ed., Leipzig, 1914).

LATIN VERSIONS. See BIBLE.

LATIN WAY (Lat. *Via Latina*). An ancient road, diverging from the Appian Way about half a mile south of the Porta Capena (in the Servian Wall), at the present church of San Cesario. It followed a course farther inland than the Via Appia and gave direct communication with the interior of the Samnite

territory as far as Venafrum. A short branch led to Tusculum, and at Teanum a crossroad, the Via Hadriana, connected the Latin Way with the Appian Way. Two ancient tombs on the Via Latina, near Rome, have interesting frescoes. Consult: T. Ashby, "Classical Topography of the Roman Campagna," in *British School at Rome, Papers*, vols. iv, v (London, 1907-10), and Baedeker, *Central Italy and Rome* (15th Eng. ed., Leipzig, 1909). See LATIN GATE.

LATITUDE (Lat. *latitudo*, breadth, from *latus*, OLat. *stlatus*, broad) AND **LONGITUDE** (Lat. *longitudo*, length, from *longus*, long; connected with Goth. *laggs*, OHG., Ger. *lang*, AS, Eng. *long*, Skt. *dirgha*, OPers. *drānga*, OChurch Slav *dlǫgŭ*, Lith *ilgas*, long). Geographical terms used in specifying the position of places on the earth's surface. Longitude is the angle at the pole between two great circles drawn on the earth's surface, passing through the poles, and touching respectively the place whose longitude is in question and the place selected as the origin of longitude. Latitude is the angular distance of a place north or south of the equator. The geocentric latitude is determined as follows. In Fig. 1, let *S* be any assumed point on the surface of the earth, *O P Q P* is the section of the earth through the meridian of the place *S*, *O Q* is the plane of the equator; *P P* is the polar axis; and *C* is the centre of the earth. If *T T'* is the tangent to the meridian at *S* and *S C'* is perpendicular to *T T'* at *S*, then the angle *S C' Q* is the latitude of the place *S*. This differs from the *truc* or *geocentric* latitude,



which is the angle *S C Q*, and the difference is 11' 30" at the latitude of 45°. The *geocentric* latitude is used in navigation only in the correction of sights for lunar distances by the old methods. Latitude is reckoned from the equator to the poles, a place on the equator having latitude 0°, and the poles 90° N. and 90° S respectively. Longitude is best measured along the equator from the prime meridian. But as nature has not, as in the case of latitude, supplied us with a fixed starting point, each nation has chosen its own prime meridian, thus, in the United States, in Great Britain and her colonies, in Germany, Holland, and other states, longitude is reckoned from the meridian which passes through Greenwich. The Greenwich meridian also has been taken as the primary meridian in the International Map of the World now in course of construction. In France the prime meridian is that through Paris, etc.; and in many old charts, as well as in German atlases down to a recent date, from Ferro (one of the Canary Isles), the meridian of which (17° 40' W from Greenwich) is the conventional dividing line between the Eastern and Western hemispheres, or from the Madeira Isles. It is reckoned east and west from 0° to 180°, though astronomers reckon from 0° west to 360° west and never use east longitude. It will easily be seen that, if the latitude and longitude of a place be given, its exact position is known, for the latitude confines its position to a circle called a parallel of latitude passing round the

earth at a uniform fixed distance from the equator, and the longitude shows what point of this circle is intersected by the meridian of the place, the place being at the intersection.

The measurement both of latitude and longitude depends upon astronomical observation. The principle on which the more usual methods of finding the latitude depend will be understood from the following considerations: To an observer at the earth's equator the celestial poles are in the horizon, and the highest point of the equator is in the zenith. If now he travel northward over one degree of the meridian, the north celestial pole will appear one degree above the horizon, while the highest point of the equator will decline one degree southward; and so on, until, when he reached the terrestrial pole, the pole of the heavens would be in the zenith, and the equator in the horizon. The same thing is true with regard to the Southern Hemisphere. It thus appears that to determine the latitude of a place we have only to find the altitude of the pole, or the zenith distance of the highest point of the equator (which is the same thing as the complement of its altitude). The altitude of the pole is found most directly by observing the greatest and least altitudes of the polar star (see POLE), or of any circumpolar star (q.v.), and (correction being made for refraction) taking half the sum. The method most usual with navigators and travelers is to observe the meridian altitude of a star whose declination or distance from the equator is known, or of the sun, whose declination at the time may be found from the *Nautical Almanac*; the sum or difference according to the direction of the declination) of the altitude and declination gives the meridian altitude of the equator, which is the colatitude. Other methods of finding the latitude at sea require more or less trigonometrical calculation. For very precise latitude determinations astronomers and geodesists employ an instrument called a zenith telescope, with which the difference of meridional zenith distance can be measured micrometrically for certain pairs of stars. From this difference the latitude can be computed if the declinations of the stars are known. See NAVIGATION.

To understand the determination of longitude by observation, it is necessary to remember that differences of longitude correspond to differences of time. Thus, if a place be in longitude 15° west of Greenwich, its local time will be one hour slow of Greenwich time. Similarly 30° correspond to two hours, etc. (See INTERNATIONAL DATE LINE.) To find the longitude in any place, it is thus only necessary to ascertain how much its local time is fast or slow of Greenwich. On shipboard the navigator uses a chronometer, the error of which in Greenwich mean time and its daily rate of gain or loss are ascertained before leaving port. Anywhere at sea he can find out his local time at any moment by measuring the altitude of the sun with a sextant and making the necessary calculations. This local time he compares with the Greenwich time shown at the same moment by the chronometer, or the international wireless signals sent out by coöperative action from a number of national observatories according to a prearranged system. The difference in hours, multiplied by 15, is then the longitude in degrees. Longitudes on land are determined by astronomers and geodesists on the same principle, only

here the comparison of local with Greenwich time can be made more accurately by direct telegraphic comparison of the standard Greenwich clock with the clock or chronometer at the observing station. If the latter station is very far from Greenwich, its time is usually compared telegraphically, not with Greenwich itself, but with some nearer place whose longitude has already been determined as a national observatory or standard clock on a telegraph circuit. The above methods of determining longitude are so superior in precision to all others that they are practically the only ones now in use. See NAVIGATION.

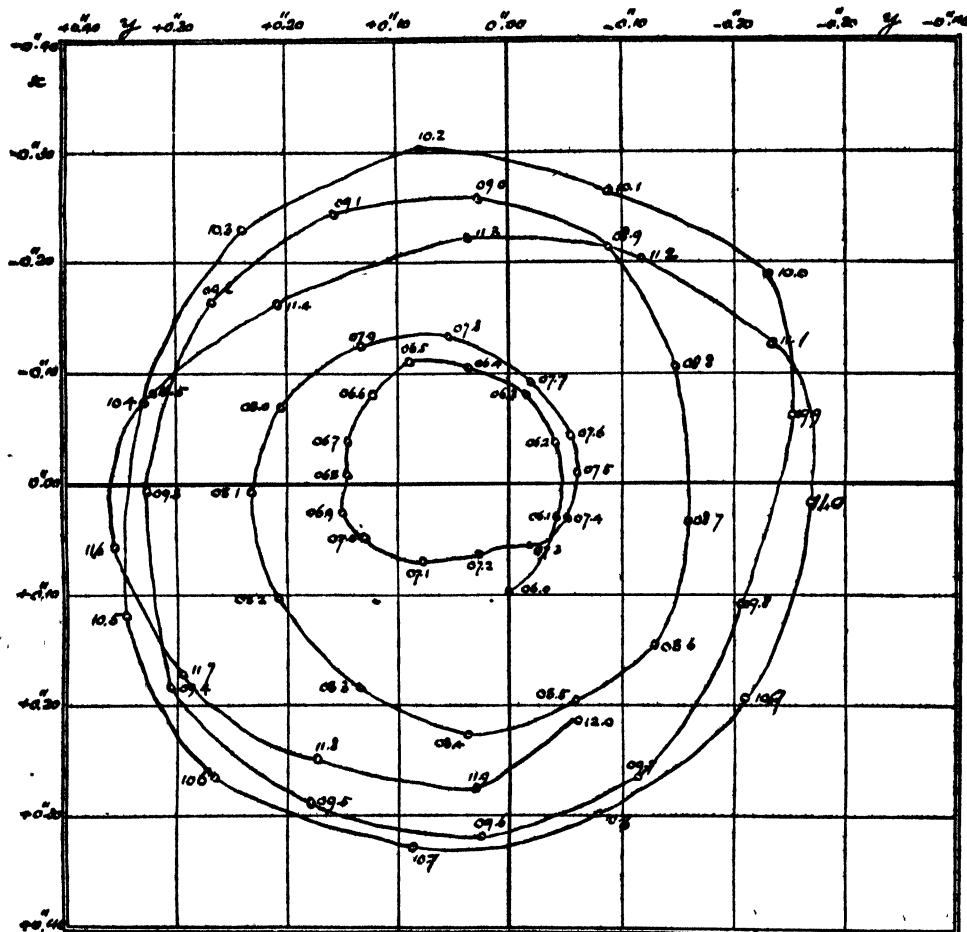
When applied to a heavenly body, the terms "latitude" and "longitude" have the same relations to the celestial equator and its poles, and to the point on the ecliptic called the equinox, that terrestrial latitude and longitude have to the equator and a first meridian. The corresponding coördinates of a heavenly body relatively to the celestial equator are called its declination (q.v.) and right ascension (q.v.). See DEGREE OF LATITUDE; DEGREE OF LONGITUDE, MAP, NAVIGATION; ASTRONOMY

LATITUDE, VARIATION OF. It was long suspected that terrestrial latitudes might be subject to small changes, and that these might possibly affect the results of ordinary astronomical observations. But in spite of all efforts to detect with certainty the existence of such changes, it was not until the year 1888 that Küstner proved beyond a doubt that latitudes vary by observable amounts. His observations were made in Berlin, and he found that the latitude of that place was less by two-tenths of a second of arc in the spring of 1885 than it had been in the spring of 1884. His result has been abundantly confirmed by subsequent observers.

Until the publication of the work of Küstner in 1888, fundamental astronomy had adopted invariability of latitude as a fact practically established. It was at once evident that all the results of astronomical observations made prior to that date must in consequence be subject to so much error as might be produced by assuming a constancy of latitudes in the discussion of the observations. This was actually shown to be the case by Chandler, of Cambridge, Mass., who in 1891 made an exhaustive analysis of the most reliable latitude determinations then available. Moreover, he reached the conclusion that the motion of the pole, to which is due the variation of latitude, arises from the superposition of two simple motions. One of these is an annual motion in an ellipse whose major and minor axes are respectively about 28 feet and 8 feet long, and whose centre lies on the earth's axis of figure, while the other is a motion in a circle of 15 feet radius and having a period of 428 days, both motions being counterclockwise. The former motion is regarded as being due to the seasonal variation of the precipitation on the earth's surface, and of the atmospheric and oceanic currents; the latter probably arises from the fact that, even were the disturbing agents just mentioned not in operation, the axes of rotation and of figure would not coincide, but would make a small angle with each other. Later investigations have brought to light a third component of the motion, known as the Kimura term from its discoverer, but no satisfactory explanation of its cause has yet been offered.

The importance of a continuous record of the motion of the pole is obvious. The work of securing such a record was undertaken by the International Geodetic Association, which about the end of 1899 inaugurated systematic observations at four stations—in Japan, California, Maryland, and Italy, situated nearly on the same parallel of latitude. Two private observatories also participate in the work voluntarily. The advantage of having the observing stations on the same parallel or very near it—an arrangement first suggested by Fergola, of

has been noticed at all four stations. The reality of this small variation of latitude was first announced by Kimura in 1902, and accordingly the corresponding term in the motion of the pole has been called the Kimura term, to which reference has already been made. Consult Chandler's articles in the *Astronomical Journal* (Cambridge, Mass.), and Albrecht's articles published in the reports of the International Geodetic Association and also, in abridged form, in the *Astronomische Nachrichten* (Kiel). The accompanying chart, copied from the latter



Naples—consists in the possibility of observing just the same stars at all the observing stations, so that the differences of latitude of any station are determined independently of any knowledge of the exact position of the pole on the sky. This is most important, for the positions of the stars are never known with absolute precision, being themselves but the results of fallible human observation. Moreover, the polar motion can be deduced from the latitude differences of the observatories just as well as from the actual latitudes. It is clear that if the pole is tipped towards one of the stations the latitude of that station will be increased, while that of a station situated on the opposite side of the earth will be correspondingly diminished. At times, however, a small but decided increase of latitude

journal, shows the wandering of the pole during the period 1906-11. See PARALLAX.

LATITUDINARIANS. The name sometimes applied to a school of English writers in the seventeenth century who sought to reconcile the Church of England and the Puritan element upon the basis of subordinating differences in doctrine to the broad essentials of religion. See CAMBRIDGE PLATONISTS.

LATIUM, la'shi-um. Originally the name of the broad plateau on the western coast of central Italy, lying southeast of the Tiber, between the Apennines and the sea, near the centre of which rises the isolated Mons Albanus, the crater of an extinct volcano. The central part of this district was known as the Campagna di Roma (q.v.). When Rome became predominant in this

region and pushed her conquests among the Volsci, the Hernici, and the Aurunci, and other tribes that dwelt among the foothills of the Apennines, the name Latium was extended to include all the country from the Tiber to the Liris (now Garigliano). The early inhabitants of Latium—the Latini (q.v.)—were a shepherd people of warlike, marauding habits, dwelling in many towns and loosely bound into a sort of federation, with a common worship and a central shrine of Jupiter Latiaris on Mons Albanus. Their earliest towns were Ardea, Lanuvium, and Lavinium in the plain, and Tusculum, on the Alban slopes. Alba Longa was also an early settlement, from this town, according to the story, which may well be based on fact, was colonized Rome (q.v.). In the course of time Rome destroyed all the neighboring towns or reduced them to a state of vassalage and at length became the recognized head of the Latin League. The powers of the Latins were reduced, their duties as allies (but not their privileges) were increased, and finally the Latin League was abolished. Then the towns revolted in 340 B.C., and the Latin War put an end to their independent political existence. Again, in 89 B.C., the Latin towns took up arms against Rome in the Social War (q.v.). This time the confederates were thoroughly crushed, and Latium never again thought of resisting the power of Rome. By the end of the Republic all the Latin towns enjoyed the privileges of Roman citizenship.

Bibliography. Robert Burn, *Rome and the Campagna* (London, 1871); Bugge, *Italische Landeskunde* (Christiania, 1878); Sophus Heinrich Nissen, *Italische Landeskunde*, vol. ii (Berlin, 1902); Thomas Ashby, Jr., "The Classical Topography of the Roman Campagna," in *Papers of the British School at Rome*, vols. i, iii-v (London, 1902, 1904-06); R. A. Lanciani, *Wanderings in the Roman Campagna* (Boston, 1909); Gius Tomassetti, *La Campagna Romana* (3 vols., Rome, 1910-).

LATONA (Lat., from Gk. Ἀητώ, *Lētō*). In Grecian mythology, daughter of Cœus and Phœbe, the mother of Apollo and Artemis by Zeus. The oldest version of the legend is in the Homeric Hymn to Apollo. In this all lands refused to receive the goddess in her need, except Delos (q.v.), and this island yielded only when Leto swore it should be the specially favored seat of worship for the deity whose mother she was to be. Later legend made the jealousy of Hera more prominent and added the tale that Poseidon fixed the floating island of Delos, that it might furnish a refuge for Latona. This later version also made Artemis the twin sister of Apollo. Leto was commonly worshiped in conjunction with her children, but we hear of separate shrines to her at Delos, Platea, Delphi, Argos, Mantinea, and in Xanthus in Lycia; there was a grove sacred to her in Crete. In Hellenistic and Roman times the name was given to the nature goddess worshiped under the name of the "Mother" throughout much of Asia Minor, and often called Artemis.

LATOPOLIS, lā'tōp'ō-lis. See ESNE.

LA TORRE, DUQUE DE. See SERRANO Y DOMINGUEZ, FRANCISCO, DUQUE DE LA TORRE.

LA TOUCHE-TRÉVILLE, lā tōōsh'-trā'vél', LOUIS RENÉ VASSOR, VISCOUNT DE (1745-1804). A French naval officer, born at Rochefort. He entered the navy in 1757 and distinguished himself especially in the American Revolution. In 1780 he was put in command of a frigate for his

bravery in the capture of a British vessel off Newport, R. I., and in the next year was wounded at Yorktown. In 1786 he took part in the framing of the Maritime Code, and three years later was deputy to the States-General from Montargis. Under the Directory he took charge of an expedition against Naples. He commanded a squadron at Brest and met Nelson and forced him to retreat (1801). At the end of the same year he was put in command of the fleet at Aix destined for Santo Domingo. He got to Port-au-Prince in time to save the city from the negroes, fortified the place, and with it as a base made several successful attacks on the British West Indies and English commerce. He succeeded in beating off the fleet sent to capture him (1803). In 1804 he took command of the French fleet in the Mediterranean, but died in the same year.

LA TOUR, lā'tōor', MAURICE QUENTIN DE (1704-88). A French pastel-portrait painter. He was born at Saint-Quentin and may be called self-taught, though he was the pupil in Paris of a little-known artist, Spoëde. He went to Cambrai when the congress was held there in 1724 and is said to have attracted so much attention that he was invited to go to London with the English Ambassador. At least his sojourn in England is authentic. In 1746 he became a member of the Academy, was promoted councillor five years later, and in 1750 became court painter, with lodgings in the Louvre, where his sitters included the court and all the notable characters of the day. He founded a free school of design at Saint-Quentin and left to the Ecole des Beaux-Arts three prizes, which are still distributed. Especially fine were his portraits of women, which were always flattering yet characteristic, often surrounded by highly elaborate and beautiful accessories. Among these must be mentioned Queen Mary Leszczynska, Madame de Pompadour (1755), the Dauphine Marie de Saxe, and Madame de Mondonville, all in the Louvre; Mademoiselle Camargo and Mademoiselle Fel, at Saint-Quentin. His best portraits of men include Louis XV, the Dauphin, Rousseau, and D'Alembert, all in the Louvre; Voltaire, the Abbé Huber, at Saint-Quentin; several of himself, two of which are in Dijon Museum. La Tour can best be studied in the Museum of Saint-Quentin, which contains 87 pieces. Many of these (so-called "preparations" or sketches for his finished pictures) are among the best of his works, since he was never satisfied and frequently spoiled his portraits by retouching them. Consult biographies by J. F. Champfleury (Paris, 1891) and J. M. Tourneux (ib., 1904); also Edmond de Goncourt, in *L'Art du dix-huitième siècle* (ib., 1880); Henry Lapauze, *Les pastels de La Tour à Saint-Quentin* (ib., 1899); Frederick Wedmore, *French Art from Watteau to Prudhon* (London, 1906).

LATOUR D'AUVERGNE, dō'vâr'ny', THÉOPHILE MALO CORRET DE (1743-1800). A hero of the French Revolution, born at Carhaix, Brittany, of an illegitimate branch of the family of the dukes of Bouillon. He entered the army in 1767 and in 1782 served under the Duke of Crillon at Port Mahon. During the early years of the Revolution Latour fought in the armies of the Alps and of the Pyrenees. Refusing all advancement in rank, he led on foot and in a simple captain's uniform his column of 8000 grenadiers, known on account of their murderous bayonet charges as the *Infanterie Célèbre*.

Having left the army in 1795, he reënlisted in 1797 as a substitute for the only son of an old friend and fought with Masséna in Switzerland. When he was subsequently with the Army of the Rhine in 1800, as he still refused all promotion, Bonaparte bestowed on him the title of The First Grenadier of France upon the request of Carnot. He was killed on June 27 of that year, at Oberhausen, near Neuburg, in Bavaria. When he died, the whole French army mourned for him three days; his heart was embalmed and placed in a silver vase carried by his company; his sabre was placed in the church of the Invalides; and at every parade till the close of the Empire, at the muster roll of his regiment, Latour's name was called, and the eldest sergeant replied, "Dead on the field of honor." This custom is still followed to-day, when the Forty-sixth Regiment takes the colors on parade.

LA TRAPPE, là trap. A narrow valley in Normandy, in the Department of Orne, closely shut in by woods and rocks and very difficult of access (Map: France, N., F 4). In these woods stands the famous Benedictine monastery of La Trappe, or La Grande Trappe, notable as the place in which the Trappist Order (q.v.) originated.

LATREILLE, la'trâ'y', PIERRE ANDRÉ (1762-1833). A French zoölogist, born at Brives, Corrèze. Although he was ordained as a priest in 1786, he devoted most of his life to the study of zoölogy. In 1798 he was placed in charge of the entomological collections at the Museum of Natural History in Paris, and in 1814 he became a member of the Academy of Sciences. After the death of Lamarck he was appointed professor of zoölogy at the Museum, the department being divided between Latreille and H. M. D. de Blainville. Latreille wrote voluminously, his works extending over the entire field of zoölogy; but it is as an entomologist, and a reformer of the prevailing systems of classification, that he was most famous. The following are among his more important works: *Précis des caractères généraux des insectes disposés dans un ordre naturel* (1796); *Histoire naturelle des singes* (2 vols., 1801); *Histoire naturelle des reptiles* (4 vols., 1802; 2d ed., 1826); *Histoire naturelle générale et particulière des crustacés et insectes* (1802-05); *Familles naturelles du règne animal* (1825); *Cours d'entomologie* (1831-33).

LA TRÉMOILLE, là trâ'mwâ'y', or **TRÉMOUILLE**, trâ'mo'y', LOUIS II DE, VICOMTE DE THOUARS, PRINCE DE TALMONT (1460-1525). A French soldier, who was known as the knight *sans reproche*. In 1488, in command of the army of Charles VIII, he defeated the rebel forces under the Duke of Brittany at Saint-Aubin du Cormier, took prisoner the Duke of Orléans, and massacred the other captives after having banqueted them. In 1495 he distinguished himself in the victory of Fornovo. By Louis XII he was placed in command of the Army of Italy. He took Milan in 1500 and was appointed admiral of Guienne (later of Brittany) and Governor of Burgundy. In 1503 he fought unsuccessfully against Gonzalvo de Córdoba in the Neapolitan territories. In 1513 he was defeated by the Swiss at Novara, in 1515 distinguished himself at Marignano, and defended Picardy against the English and Imperialists in 1522-23. He was killed at Pavia, Feb. 24, 1525. Consult Louis Sandret, *Louis II de la Trémoille, le chevalier sans reproche* (Paris, 1881).

LATROBE, là-trôb'. A borough in West-

moreland Co., Pa., 41 miles by rail east by south of Pittsburgh, on the Loyalhanna Creek, and on the Pennsylvania and the Ligonier Valley railroads (Map: Pennsylvania, C 7). It is the centre of a fertile agricultural district which has valuable deposits of coal and iron ore. Several coal mines are worked. There are large coke ovens, extensive steel mills, paper, woolen, lumber, and flour mills, and manufactories of glass, bricks, etc. The borough contains St. Vincent's Monastery, St. Xavier Convent, the Latrobe Hospital, and a high school. Pop., 1900, 4614; 1910, 8777; 1914 (U. S. est.), 10,549.

LATROBE, BENJAMIN HENRY (1764-1820). A distinguished British-American architect, descended from the Huguenot Henry Boneval de la Trobe. He was born in Yorkshire, England, studied on the Continent, achieved professional distinction as an architect in London, and in 1796 emigrated to the United States, where he became eminent both as an engineer and as an architect. Among the works with which his name is associated are the James River and Appomattox Canal, the Chesapeake and Delaware Canal, and the Schuylkill River water works in Philadelphia. He was the architect of the Bank of Pennsylvania, the Academy of Art, and the Bank of the United States in Philadelphia, and of the Roman Catholic Cathedral and the Custom House in Baltimore. In 1803 he was appointed by Jefferson surveyor of public buildings in Washington, and his advice had much to do with the plans and decorations of the capitol. He was engaged to rebuild the capitol after it was burned in 1814. In 1817 he gave up his connection with the government. His *Journal: Notes and Sketches of an Architect, Naturalist, and Traveler* was published in 1905.—His son, BENJAMIN HENRY (1807-78), likewise an engineer, was for 22 years chief engineer of the Baltimore and Ohio Railroad, and afterward was a consulting engineer of the Hoosac Tunnel and a member of the Advisory Board of the Brooklyn Bridge.—The son of the second Benjamin Henry, CHARLES HAZLEHURST (1833-1902), also an engineer, is remembered for his construction of the Arequipa Viaduct in Peru and the Agua de Vernegas Bridge in Peru and for his authoritative studies of Baltimore sewerage.

LATROBE, JOHN HAZLEHURST (1803-91). An American publicist, son of Benjamin H. Latrobe (1764-1820). He was born in Philadelphia. He became a cadet in the United States Military Academy at West Point and subsequently studied law with Robert G. Harper, of Baltimore, and was called to the bar in 1825. His services as counsel were soon engaged by the Baltimore and Ohio Railroad, with which he remained connected until his death. He was also engaged by Ross Winans in certain important litigations before the Russian courts, respecting the construction of the railroad between St. Petersburg and Moscow. The well-known "Latrobe stove" or "Baltimore heater" was his invention. Aside from his professional duties, he was conspicuous in his devotion to the welfare of Baltimore. Druid Hill Park owes much to his care. He was one of the founders and a lifelong promoter of the Maryland Institute. For many years he was president of the Maryland Historical Society. Among the advocates of African colonization he was perhaps the foremost. For the colony of Maryland in Liberia, established at Cape Palmas, he pre-

pared a charter under which a prosperous government was maintained for many years. After the death of Henry Clay he became president of the American Colonization Society. His *History of Maryland in Liberia* was published in 1885. Some of his writings relating to local history have a permanent value; as, his *Life of Charles Carroll*, *Personal Recollections of the Baltimore and Ohio Railroad*, and *History of Mason and Dixon's Line*.—His son, FERDINAND CLAIBORNE (1833–1911), was born in Baltimore, was admitted to the bar in 1860, served as mayor of Baltimore for seven terms, and was repeatedly sent to the Maryland Legislature, serving twice as Speaker of the House of Delegates.

LATRUNCULI (Lat. nom. pl., pawns, freebooters, dim. of *latro*, in older sense of 'hired soldier,' 'soldier'), or **LUDUS LATRUNCULORUM**. An ancient Roman game, played, with men of different colors, on a board divided into squares by ruled lines. The name *latrunculi* properly denotes only the men; later it was applied also to the game. The details of play are unknown, but it is certain that one object of each player was to capture his opponent's pieces by inclosing them between two of his own men. The game could thus be conceived of as a sort of combat between two armies. The pieces were of varying values: some were "officers," some "men." They were fashioned of earthenware, ivory, glass, etc. A similar game was known to the Egyptians, and boards and sets of men, with animals' heads, have been found in tombs of that country. A similar board has been found in the Mycenaean palace at Knossos in Crete. The Greeks also had two games (*perrelia*, *petteia*) played with men—one the game of "five lines," the other called "cities" ("cities" was properly the name of the squares on the board); the men were called "dogs." It seems likely that while some of the games were purely games of skill, analogous to draughts and chess, in other varieties dice were used, as in backgammon. The *ludus latruncularum* was very popular and is frequently alluded to in ancient writers. Consult the article "Latrunculi," in William Smith, *A Dictionary of Greek and Roman Antiquities*, vol. ii (3d ed., London, 1891).

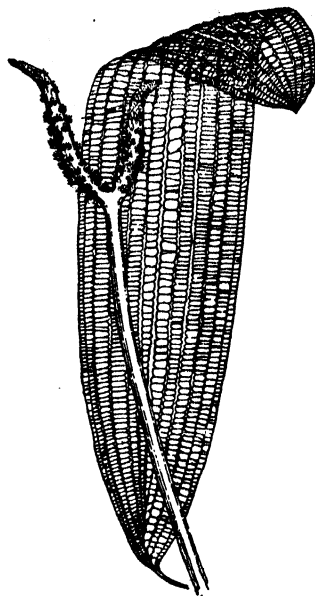
LATTEN (OF. *laton*, Fr. *laiton*, from Sp. *lata*, lath, Portug. *lata*, tin plate, from OHG. *lata*, *latta*, Ger. *Latte*, Eng. *lath*; connected with Ir. *slath*, Bret. *laz*, rod, and with Ger. *Laden*, shutter). A term applied to a mixed metal made of copper and zinc and practically the same as sheet brass. The term is now seldom used and is restricted to brass worked into ornaments for ecclesiastical purposes.

LATTER-DAY PAMPHLETS. Violent and radical political tracts by Thomas Carlyle (1850).

LATTER-DAY SAINTS. See MORMONS.

LATTICE-LEAF (OF., Fr. *lattis*, from *latte*, Ger. *Latte*, lath), **LACELEAF**, **WATER YAM**, or **OUVIRANDRA**, *Aponogeton fenestralis*. A curious Madagascar aquatic plant, the older leaves of which seem to lose all their green tissue and to leave only the skeleton of the leaf. It is referred by some botanists to the family Aponogetonaceae, nearly allied to Naiadaceae, with which it was formerly classed. It has a light-brown edible rootstock, about the thickness of a man's thumb, 6 to 9 inches long, often branching, internally white and farinaceous. The crown of the plant is under water, and the leaves float just below the surface; the flowers, arranged in

forked spikes, rise above it. The young leaves, while in the bud, are not lattice-like. There are



LATTICE-LEAF.

about 20 species in this genus, which occurs in Africa, Asia, and Australia.

LATTIMORE, SAMUEL ALLAN (1828–1913). An American chemist and educator, born in Union Co., Ind. In 1850 he graduated from Indiana Asbury (now De Pauw) University, where he was classical tutor from 1850 to 1852, took the degree of A.M. in 1853, and was professor of Greek until 1860. Then for seven years he held the chair of chemistry at Genesee College, the forerunner of Syracuse University. From 1867 until his retirement in 1908 Dr. Lattimore was professor of chemistry at the University of Rochester, where he was also acting president in 1896–98. In addition to academic duties he found time to serve as chemist to the Board of Water Commissioners, Rochester (1872), to the New York State Board of Health (1881–83), and to the State Department of Agriculture (1886–1908); he helped to found the Western New York Institution for Deaf Mutes and did much to popularize the study of science. Dr. Lattimore was a fellow, and in 1880 a vice president, of the American Association for the Advancement of Science. De Pauw and Iowa Wesleyan each gave him an honorary Ph.D. and Hamilton College the LL.D.

LATTMANN, lät'mán, JULIUS (1818–98). A German educator, born at Goslar. He studied theology and philology at the University of Göttingen. From 1847 to 1870 he was a teacher in the Gymnasium at Göttingen; from 1870 to his retirement in 1890, director of that at Clausthal. Besides many schemes for linguistic reforms, he published a number of school textbooks, among them: *Kombination der methodischen Principien im lateinischen Unterricht* (1882; 2d ed., 1888); *Cornelii Nepotis Liber Emendatus et Suppletus* (1880; 8th ed., 1889); *Ausgleichende Lösung der Reformbewegungen des höheren Schulwesens* (1889).

LATUDE, lät'üd', HENRI MASERS DE (1725–

1805). A prisoner in the Bastille, born at Montagnac in Gascony. He learned the business of an apothecary, served in the army, and came to Paris to study mathematics. He lived for some time in great poverty here. In 1749 Latude informed Mademoiselle de Pompadour that an attempt would be made upon her life through poison in a package. He did not tell that he himself was the sender of the package. Mademoiselle de Pompadour found him out, refused to see the humor of the situation, and sent him to the Bastille. Having thrice escaped, he was thrice retaken, and spent 28 years in prison. Malesherbes brought about his release in 1777, but he was again arrested, charged with robbery, and kept in the Bicêtre till 1784, when he was freed through the intercession of Mademoiselle Legros. During the early years of the Revolution Latude was very popular in the character of a victim of the old régime. In 1793 the Convention compelled the heirs of Mademoiselle de Pompadour to pay him 60,000 francs damages. In 1791-92 Thierry published *Le despotisme dévoilé, ou mémoires de Latude*, which attained great notoriety.

LA TUQUE, la tùk'. A town in Champlain Co., Quebec, Canada, at the junction of the Bostonnais and St. Maurice rivers, and on the Quebec and Lake St. John Railway, about 87 miles northwest (direct) of the city of Quebec and 122 miles by rail (Map Quebec, F 3). There is steam communication with Grandes Piles by way of the St. Maurice River. The chief public buildings are the town hall, a Roman Catholic convent, a college, and a hospital. The leading industry is the manufacture of pulp, for which there is abundant water power. The town owns its electric-lighting plant. Pop. (1911), 2934.

LATUS RECTUM (Lat., straight side). In mathematics, the latus rectum of a conic section is the double ordinate of a focus, or the focal chord parallel to the directrix. Its length in the ellipse and hyperbola (q.v.) is $\frac{2b^2}{a}$ and in the parabola $y^2 = 4px$ it is $4p$, or twice the distance of the focus from the directrix. The word *δρῶλα* was used by Apollonius, but in the Latin translations it always appears as "latus rectum." Apollonius also speaks of it as the "parameter of the ordinates" (παρ' ἣν ὀδυναται αἱ καταγόμεναι τεταγμένους). See ELLIPSE; PARAMETER.

LAUBACH, HERMANN, COUNT SOLMS-. See SOLMS-LAUBACH.

LAUBAN, lou'bân. A town in the Province of Silesia, Prussia, on the Queis, at the converging of three railway lines, 40 miles west-southwest of Liegnitz (Map: Germany, F 3). It has a fourteenth-century convent of the Magdalens, a lyceum, a municipal library, and monuments to William I and Luther. Its industries include woolen, linen, and cotton weaving, bleaching, and the manufacture of earthenware, starch, dextrin, cigars, machinery, cartons, and labels. Large railway shops are located here. Pop., 1900, 13,792; 1910, 15,467. Lauban is mentioned as early as the tenth century and once belonged to the league of the six towns of Lusatia.

LAUBE, lou'be, HEINRICH (1806-84). A German novelist and dramatic author. He was born at Sprottau in Silesia and, after studying theology at Halle and Breslau, made his home at Leipzig. He aroused the hostility of the government by his participation in the liberal movement of the time and in 1834 was expelled from

Saxony and served a term of imprisonment at Berlin. After a further term of imprisonment he made a tour through France and Algeria, returning to Leipzig in 1839. He was a member of the Frankfort National Assembly (1848-49) and in 1849 became director of the Burg Theatre at Vienna, a position which he held till 1867. After a short sojourn at Leipzig (1869-70) he returned to Vienna and acted as director of the Stadt Theatre till 1879. The first period of his literary career was marked by the rapid output of novels dealing with the history of Germany as well as with contemporary social and political conditions and by his participation in the young German movement (See YOUNG GERMANY.) He also published essays and books of travel. After 1845 his attention was directed chiefly to the stage. His plays are well wrought and cleverly written and show a remarkable mastery of the technique of the stage. Of his novels, the most important are: *Das junge Europa* (1833-37); *Das Gluck* (1837); *Der Prätendent* (1842); *Die Gräfin Chateaubriand* (1843); *Der deutsche Krieg* (1863-66); *Die Böhmingen* (1880); *Louison* (1884). On the stage he first attained a reputation with his tragedy *Monaldeschi* (1845) and the comedy *Rokoko* (1846). These were followed by *Struensee* (1847), *Gottsched und Gellert* (1847), *Die Karlsschüler* (1847), *Graf Essex* (1856), *Montrose* (1859), *Böse Zungen* (1868), and *Demetrius* (1872); the last was an attempt at completing Schiller's unfinished drama of that name. Among his other works should be mentioned *Moderne Charakteristiken*, a collection of essays, and *Das erste deutsche Parlament*, an account of the revolutionary period of 1848-49. His works were published at Vienna in 16 volumes (1875-82). Consult Rudolf Gottschall, "Heinrich Laube," in *Unsere Zeit*, vol. ii (Leipzig, 1884); Johannes Proeles, *Das junge Deutschland* (Stuttgart, 1892); Ludwig Geiger, *Das junge Deutschland und die preussische Zensur* (Berlin, 1900); Georg Altman, *Heinrich Laubes Prinzip der Theaterleitung* (Dortmund, 1908); Paul Weiglin, *Gutzkows und Laubes Literaturdramen* (Berlin, 1910).

LAUD, WILLIAM (1573-1645). Archbishop of Canterbury, the upholder of Church authority in the time of Charles I. He was the son of a clothier in good circumstances and was born at Reading in Berkshire, Oct. 7, 1573. He entered St. John's College, Oxford, in 1589, became a fellow in 1593, and took his degree of M.A. in 1598. Ordained a priest in 1601, he soon made himself conspicuous at the university by his antipathy to Puritanism; but, being then a person of very little consequence, he only succeeded in exciting displeasure against himself. Yet his learning, his persistent and definite ecclesiasticism, and the genuine unselfishness of his devotion to the Church, soon won him both friends and patrons. In 1607 he was preferred to the vicarage of Stanford in Northamptonshire and in 1608 obtained the advowson of North Kilworth in Leicestershire. In 1609 he was appointed rector of West Tilbury in Essex; in 1611, in spite of strong opposition, president of St. John's College, Oxford, in 1614, prebendary of Lincoln; and in 1615, Archdeacon of Huntingdon. King James now began to show favor to Laud and in 1616 made him dean of Gloucester. In 1617 Laud accompanied his sovereign to Scotland, with the view of introducing episcopacy into the Church government of that country;

but the attempt failed. In 1621 he was consecrated Bishop of St. David's. After the accession of Charles I he was translated from the see of St. David's to that of Bath and Wells (1626), became high in favor at court, was more than ever hated by the Puritans, and was denounced in Parliament. In 1628 he was made Bishop of London. After the assassination of Buckingham Laud became virtually the chief minister of Charles and undertook to carry out the policy which he believed to be right with great firmness and persistency. It was not in accord with the spirit of the times, however, or suited to the temper of the people. In 1629 he was chosen chancellor of the University of Oxford, the centre of High-Church loyalty. From this period he was for several years busily but fruitlessly employed in trying to repress Puritanism. In the High Commission and Star Chamber courts the influence of Laud was supreme; but the penalty he paid for this influence was the hatred of the English Parliament and of the people generally. In 1633 he was raised to the archbishopric of Canterbury and in the same year was made chancellor of the University of Dublin. The famous ordinance regarding Sunday sports, which was published about this time by royal command, was believed to be drawn up by Laud and greatly increased the dislike felt towards him by the Puritans. His minute alterations in public worship, his regulations about the proper position of the altar and the fencing of it with decent rails, his attempt to force Dutch and Walloon congregations to use the English liturgy, and all Englishmen to attend the parish church where they resided, are characteristic of his principles and policy. During 1635-37 another effort was made by him to establish episcopacy in Scotland; but the first attempt to read the liturgy in St. Giles's Church, Edinburgh, excited a dangerous tumult. (See GEDDES, JENNY.) Proceedings were finally taken against him, and on March 1, 1641, he was, by order of the House of Commons, conveyed to the Tower. After being stripped of his honors and exposed to many indignities and much injustice, he was finally brought to trial before the House of Lords, Nov. 22, 1643, on a charge of treason and other crimes. The Lords, however, did not find him guilty; but the Commons had previously resolved on his death and passed an ordinance for his execution. To this the Upper House gave its assent, and, in spite of Laud's pleading a royal pardon, he was beheaded, Jan. 10, 1645. Laud had a genuine regard for learning and enriched the University of Oxford, in the course of his life, with 1300 manuscripts in different European and Oriental languages. His writings are few. Wharton published his *Diary* in 1694, and during 1857-60 Parker, the Oxford publisher, issued *The Works of the Most Reverend Father in God, William Laud, D.D., sometime Lord Archbishop of Canterbury*.

Bibliography. Peter Bayne, *Chief Actors in the Puritan Revolution* (Edinburgh, 1878); C. H. Simpkinson, *Life and Times of Laud, Archbishop of Canterbury* (London, 1894); W. H. Hutton, *William Laud* (ib., 1895); W. E. Collins (ed.), *Archbishop Laud Commemoration, 1895: Lectures on Laud, together with a Bibliography of Laudian Literature and the Laudian Exhibition Catalogue* (ib., 1895); A. C. Benson, *Archbishop Laud: A Study* (ib., 1898); H. Bell, *Archbishop Laud and Priestly Government* (ib., 1905); W. L. Mackintosh, *Life of William Laud*

(ib., 1907); Lucius Waterman, *William Laud, Archbishop of Canterbury and Martyr* (New York, 1912), containing a bibliography.

LAUDANUM (variant of *ladanum*, from Lat. *ladanum*, *ledanum*, from Gk. *λῆδανον*, *lēdanon*, resinous juice or gum of a certain shrub, from *λῆδον*, *lēdon*, mastic, from Pers. *lādan*, sort of shrub), or **TINCTURE OF OPIUM**. A fluid preparation of opium, made by macerating the sliced or powdered drug in alcohol and filtering the resultant. It is of a deep brownish-red color and possesses the peculiar nutty odor and smell of opium. Formerly it was a preparation of uncertain strength, as there was no definite rule for compounding it. But the United States pharmacopœias of 1880 and subsequent years prescribed that all fluid preparations of opium, except paregoric, should be made of such strength that 10 minims of it should represent one grain of opium. Laudanum therefore contains 48 grains of opium to the ounce. It is a powerful analgesic and hypnotic, but it causes constipation, headache, and occasionally nausea. It is too frequently used as a domestic medicine for the relief of pain, especially in cases of cramps or diarrhoea, when in the majority of cases a brisk cathartic is indicated. To young children it must be given with extreme caution, as fatal results have followed a very small dose administered to an infant for relief of supposed pain, or as a "soothing" agency. The drug is used in widely varying doses in adults, according to the indications, as interpreted by the physician. Laudanum is less used now than in former years, the active principles of opium, such as morphine and codeine, being substituted. As a local application, however, in the form of a liniment, particularly in combination with lead, it is still extensively employed. See **ANTI-DOTE, OPIUM**.

LAUDER, HARRY (real name MACLENNAN) (1870-). A Scottish comedian, born at Portobello. As a child, he worked in a flax-spinning mill in Arbroath, where he was educated as a half-timer, and then, for 10 years, in coal mines. Having managed during this time to acquire some knowledge of music, he early gained a local reputation as an amateur vocalist and entertainer, and finally, adopting the stage as a profession, made tours in Scotland and Ireland. His first notable success was at Belfast in an Irish character song, "Call Ager! Callaghan." In the London music halls he at once became a prime favorite, and in America, which he visited for the first time in 1907, he created a real sensation with his songs and characterizations. Thereafter he made frequent tours in the United States, with undiminished popularity. In the impersonation of Scottish characters, a field to which he finally confined himself exclusively, he had no rival. In 1915, with a company of bagpipers, he traveled through England to help raise recruits for the war. He is author of *Harry Lauder at Home and on Tour* (1906) and of a Scottish comedy, besides both words and music of his songs.

LAUDER, SIR THOMAS DICK (1784-1848). A Scottish author, eldest son of Sir Andrew Lauder, sixth Baronet of Fountainhall, Haddingtonshire, Scotland. For a short time he served in the Seventy-ninth Regiment (Cameron Highlanders). On the death of his father, in 1820, he succeeded to the baronetcy. For several years he was secretary to the Board of Scottish Manufacturers and to the Board of White Herring

Fishery. He became known as the author of several romances written in imitation of Scott—*Simon Roy* (1817), *Lochindhu* (1825), and *The Wolf of Badenoch* (1827). The scenes of the last two are laid in Morayshire, just before the wars of Bruce. Later in life he published *Highland Rambles and Legends* (3 vols., 1837) and *Legends and Tales of the Highlands* (3 vols., 1841). His only work now read is the *Account of the Great Moray Floods of 1829* (1830). This has survived for its graphic descriptions, its humor and pathos. He died May 29, 1848. A series of papers written during the last two years of his life for *Tait's Magazine* and entitled *Scottish Rivers* was edited with a preface by Dr. John Brown (Edinburgh, 1874).

LAUDER, WILLIAM (?-1771). A Scottish Latinist and impostor. Educated at Edinburgh University, he became a tutor there after graduation in 1695, but was unsuccessful in several attempts to obtain a collegiate appointment. He was a good Latin scholar and published *Poetarum Scotorum Musæ Sacræ* (2 vols., 1739), a collection of Latin poems, mostly paraphrases from the Bible, by Arthur Johnston, Ruddiman, Ker, and others; the circulation of the collection, however, was damaged by Lauder's injudicious praise of Johnston. He went to London in 1742 and supported himself by teaching and literary work. In 1747 he commenced the series of articles in the *Gentleman's Magazine* by which he is remembered, owing to his indictment of Milton for plagiarism. By his quotations and his plausibility he deceived even Dr. Samuel Johnson and received subscriptions for the publication of an *Essay on Milton's Use and Imitations of the Moderns in his "Paradise Lost"* (1750), to which Dr. Johnson wrote a preface and postscript. The publication of a more extended work on the subject by Lauder was arrested by John Douglas, afterward Bishop of Salisbury, who exposed Lauder's fraud, showing that he had cited excerpts from Alexander Hog's Latin translation of *Paradise Lost* as plagiarisms by Milton from Grotius, Masenius, Staphoristius, and others. Dr. Johnson obtained Lauder's confession of the forgery, notwithstanding which Lauder continued his attack on Milton and published *The Grand Impostor: or King Charles I Vindicated from the Charge of Plagiarism Brought against him by Milton, and Milton himself Convicted of Forgery* (1754). Lauder was finally obliged to emigrate to Barbados, where he died in poverty.

LAUDERDALE, JAMES MAITLAND, eighth EARL OF (1759-1839). A Scottish statesman and author, born at Ratho, Midlothian. He was educated at the University of Edinburgh, studied also at Trinity College, Oxford, and at Glasgow, read law at Lincoln's Inn, London, and became advocate in 1780. In that year he was also returned to the House of Commons for Newport, Cornwall. From 1784 to 1789 he sat for Malmesbury, in 1787 was appointed a manager for the conduct of the impeachment of Warren Hastings, and in 1790 was elected a representative peer of Scotland. While a member of the Commons, he spoke against the persons who were responsible for the American war. He was strongly opposed to the French war and is said to have made his appearance in the Lords on one occasion in the garb affected by the Jacobin organization. His attitude towards the ministry prevented his reelection in 1796 and 1802, but in 1806 he became a peer of Great Britain

and Ireland (Baron Lauderdale of Thirlestane, Berwick), Lord High Keeper of the Great Seal of Scotland, and a member of the Privy Council. He resigned in 1807, was long prominent in the Opposition in the House of Lords, and the leader of the Scottish Whigs. Ultimately, however, he became a Tory. His attack (with the Duke of Bedford) on the pension of Burke was answered by Burke in the well-known *Letter to a Noble Lord* (1796). His writings include an *Inquiry into the Nature and Origin of Public Wealth* (1804, 2d enlarged ed., 1819; trans. into Italian and French) and a considerable list of pamphlets. A volume of his *Letters to the Peers of Scotland* was published in 1794.

LAUDERDALE, JOHN MAITLAND, DUKE OF (1616-82). A Scottish politician, the grandson of John, first Lord Thirlestane, brother of the famous Secretary Lethington, and son of John, first Earl of Lauderdale, and of Isabel, daughter of Alexander Seaton, Earl of Dunfermline and Chancellor of Scotland. He was born at the ancient family seat of Lethington, May 24, 1616. He was carefully trained in Presbyterian principles and entered public life as a keen Covenanter. In 1643 he attended the Westminster Assembly of Divines as an elder of the Church of Scotland and was a party to the surrender of Charles I to the English army at New-castle. Shortly after, however, he changed his politics and became a Royalist. When Charles II came to Scotland from Holland, Lauderdale accompanied him, but, being taken at the battle of Worcester in 1651, was kept a prisoner for nine years. Set at liberty by General Monk in 1660, he hastened to The Hague and was warmly received by Charles. After the removal of Middleton in 1662 and of Rothes in 1667, Lauderdale was practically the sole ruler of Scotland and for some time displayed a spirit of moderation and an apparent regard for the religious feelings of his countrymen; but he soon became a bitter persecutor of the Covenanters. In 1672 Charles showed his appreciation of Lauderdale's conduct by creating him Earl of March and Duke of Lauderdale; two years afterward he was raised to the English peerage as Baron Petersham and Earl of Guilford and received a seat in the English Privy Council. He was one of the famous "cabal," but by his domineering arrogance excited the disgust and hatred of his colleagues as well as of the nation. The House of Commons repeatedly petitioned for his removal, and finally, in 1682, after his health had been broken by constant excesses and he had lost the favor of the King by his vote for the execution of Lord Stafford, he was stripped of his offices and pensions. He died at Tunbridge Wells, August 24 of the same year. Consult articles by Osmud Airy in the *Quarterly Review*, vol. clvii (London, 1884); in the *English Historical Review*, vol. i (ib., 1886); and a selection from the 36 volumes of Lauderdale manuscripts in the British Museum, edited by Osmud Airy for the Camden Society in four volumes (ib., 1883-85).

LAUDIAN MANUSCRIPT (CODEX LAUDIANUS). A valuable manuscript of the Acts of the Apostles, named after Archbishop Laud, who in 1636 presented it to the University of Oxford. It has in parallel columns and uncial letters the Greek text with a closely literal Latin version, different both from the Vulgate and from Jerome's. The Latin words are always exactly opposite the Greek. The portion from xxvi. 29 to xxvii. 26 has been lost. The vellum

is inferior and the ink pale. It was probably written in the west of Europe and about the sixth century. It is now in the Bodleian Library and is numbered 35. It is listed by Gregory as E, by Von Soden as a 1001. It was published by Thomas Hearne (1715), by Hansell (1864), and by Tischendorf (1870). For description, consult C. R. Gregory, *Canon and Text of the New Testament* (New York, 1907).

LAUDON, lou'dôn, or **LOUDON**, GIDEON ERNST, BARON VON (1717-90). An Austrian general, born at Tootzen, Livonia, of an old Scottish family. After serving in the Russian army (1732-39) he went to Austria in 1742 and rose to be colonel at the outbreak of the Seven Years' War. Within a year his services raised him to the rank of major general. He was present at the battles of Rossbach and Hochkirch, and in 1759 his forces with those of the Russian General Soltikoff overwhelmed the army of Frederick the Great at Kunersdorf. He won further victories at Glatz and Landshut. He became Baron (1758) and Aulic Councilor (1766). In 1769 he was commandant general in Bohemia and in 1778 became field marshal. In the Turkish War of 1788-89 he captured Belgrade. In 1790 he was made generalissimo. Consult Janko, *Leben des Feldmarshalls von Laudon* (Vienna, 1869).

LAUDONNIÈRE, lô'dô'nyâr', RENÉ DE (?-c.1586). A French navigator of the sixteenth century. In 1562 he was with Ribaut when the latter made his unsuccessful attempt to establish a Huguenot colony at Port Royal in South Carolina, and two years later was dispatched at the head of a second expedition to the New World. On June 25, 1564, he arrived off the mouth of the St John's River, Florida, and, sailing up the river for a distance of 12 miles, began the erection of a fort, which he named Caroline in honor of Charles IX. Laudonnière's management involved the colonists in quarrels with the Indians, upon whom they were dependent for supplies. Some of the number, mostly impoverished gentlemen, who resented the hard labor to which they were put, revolted against the rule of their leader and forced him to sanction a marauding expedition to pillage the Spanish settlements in Cuba. Affairs went from bad to worse, and the colony was threatened with destruction for want of food. On Aug. 3, 1565, Capt. John Hawkins, the celebrated English slaver and privateer, arrived off the mouth of the river and supplied the colonists with provisions, selling them also one of his ships, on which Laudonnière intended to return to France. On August 29 Jean Ribaut arrived with seven ships and some 300 men and superseded Laudonnière in the command, the latter being ordered home to defend himself against accusations of tyranny and treason. His departure for France was delayed by the appearance of a Spanish fleet under Menéndez de Avilés, which had been dispatched for the purpose of driving out the French. On September 10 Ribaut set out in his ships to attack the Spaniards at St. Augustine, leaving Laudonnière in command at the fort. About 10 days later Menéndez de Avilés stormed the fort, and a massacre of the colonists ensued. Laudonnière succeeded in effecting his escape. With the rest of the survivors of the massacre he was rescued by the remnant of the French fleet. He went to England and did not return to France until 1566. Twenty years later he published *L'Histoire notable de la Floride, contenant les trois*

voyages faites en icelle par des capitaines et des pilotes français, translated in Hakluyt's *Principal Navigations* (1589) and in French's *Historical Collections of Louisiana*. The last-named book also contains other original documents relating to this episode, which is fully treated in Francis Parkman, "Pioneers of France in the New World," in *France and England in North America*, part i (Boston, 1898). See MENÉNDEZ DE AVILÉS; RIBAUT.

LAUENBURG, lou'en bōrk. A town in the Circle of Lauenburg, in the Province of Schleswig-Holstein, Prussia, situated on the Elbe at its confluence with the Trave Canal, 25 miles southeast of Hamburg (Map: Germany, D 2). The chief buildings are the Evangelistic Church, two asylums for widows, and the courthouse. Lauenburg is an important commercial centre. The chief industry is shipbuilding and there are manufactures of matches, barrels, bricks, and beer. In 1911 the ferry over the Elbe was replaced by a railway bridge. Pop., 1900, 5346. The castle after which the Duchy of Lauenburg was named was built in 1181 by Duke Bernhard of Saxony.

LAUENBURG. A circle in the Province of Schleswig-Holstein Prussia (Map: Germany, D 2). Area, 455 square miles, pop., 1910, 54,571. The district is productive and well forested. Agriculture and cattle raising are the chief industries. There are numerous lakes. Lauenburg was inhabited by Slavic tribes when Charles the Great conquered it in 804. It formed part of the Duchy of Saxony, and in 1263 became a separate state, ruled by the dukes of Saxe-Lauenburg. This line became extinct in 1689, when a number of princes contested the succession. Finally, in 1702, Lauenburg acknowledged the dominion of the Elector of Hanover. In 1803 it passed to France. In 1815 Denmark obtained possession of it, and it was united with Holstein in 1863, and passed to Prussia and Austria after the War of 1864. By the Convention of Gastein of 1865 Austria gave full possession to Prussia, and the latter has possessed it since that time. It has been a circle of Schleswig-Holstein since 1876. In 1890, when Bismarck retired from office, William II conferred upon him the title of Duke of Lauenburg. Bismarck's main estate (Friedrichsruh) is within the limits of the old duchy.

LAUENBURG, lou'en-burk. A town in the Province of Pomerania, Prussia, situated on the Leba, 38 miles northwest of Danzig (Map: Germany, G 1). There are manufactures of woolen and linen cloth and of white and common leather, matches, stoves, cement bricks, lumber, machinery, and spirits. It makes good sparkling wine and has a considerable trade in cattle. Pop., 1900, 10,436; 1910, 13,916.

LAUFENBERG, HEINRICH VON. See HEINRICH VON LAUFENBERG.

LAUFER, lou'fēr, BERTHOLD (1874-). An American anthropologist and Orientalist, born at Cologne, Germany. He was educated at the University of Berlin (1893-95), at the Seminary for Oriental Languages, Berlin (1894-95), and at the University of Leipzig (Ph.D., 1897). Coming to the United States in 1898, he participated in the Jesup North Pacific expedition to Sakhalin Island and eastern Siberia (1898-99), in the Jacob H. Schiff expedition to China (1901-04), and in the Mrs. T. B. Blackstone expedition to China and Tibet (1908-10). He was an assistant at the American Museum of

Natural History (1904-06), lectured at Columbia University (1905-07), and at the Field Museum of Natural History he became assistant curator of the Eastern Asiatic department in 1908 and associate curator of Asiatic ethnology in 1911. He wrote a *Descriptive Account of the Collection of Chinese, Tibetan, Mongol, and Japanese Books in the Newberry Library* (1913).

LAUFF, JOSEPH VON (1855-). A German dramatist and novelist. He was born in Cologne, attended school at Kalkar and Münster, where he finished the course in the Gymnasium, entered the artillery in 1877, became lieutenant in 1878, captain in 1890, and major in 1898. At the personal request of the Emperor, in 1898, he became dramatic critic of the Royal Theatre at Wiesbaden, a position in which he continued till 1903. In 1886 he had begun his literary career with some mediocre epics, turning then to novels, of which he wrote: *Die Heise* (1892; 6th ed., 1900); *Regina cæli* (1894; 7th ed., 1904); *Die Hauptmannsfrau* (1895; 8th ed., 1903); *Der Mönch von St. Sebald* (1896; 5th ed., 1899); *Im Rosenhag* (1898; 4th ed., 1900); *Karrekiek* (1902; 8th ed., 1906); *Marie Verwohnen* (1-6 eds., 1903); *Pittje Pittjewitt* (1903; 14th ed., 1907); *Frau Alet* (1905; 14th ed., 1912); *Die Tanzmamsell* (1907); *Sankt Anna* (1908); *Kavelaer* (1910); *Lux aterna* (1912; 11th ed., 1913). Of these his *Karrekiek* (dramatized by himself in 1902, *Der Heerohm*) and *Pittje Pittjewitt* are by far his best. Of his dramas—*Inez de Castro* (1894; 3d ed., 1895), *Der Burggraf* (1897; 6th ed., 1900), *Der Eisenbahn* (1899; 2d ed., 1902), *Ruschhaus* (1900), *Vorwärts* (1900), *Der Deichgraf* (1907), *Gotberger* (1907), and *Heerohm* (1902)—the last is by all means the best. Some of these are said to have been written at the suggestion of William II. In his epics he follows but fails to equal Julius Wolff; in his dramas he is an unsuccessful disciple of Ernst von Wildenbruch; but in those stories and novels that picture the life and people of the lower Rhine he has been deservedly successful. But for the most part his talent lies in form. He was ennobled in 1913. Consult: A. Schroeder, *J. Lauff* (Wiesbaden, 1898); Bruno Sturm (B. Breitner), *J. Lauff* (Vienna, 1903); K. Pagenstecher, in *Nord und Süd* (Breslau, 1904); also article in Westermann's *Monatshefte* (Brunswick, July, 1905); and W. Muller-Waldenburg, *J. Lauff* (Stuttgart, 1906).

LAUGÉE, lô'zhâ', DESIRÉ FRANÇOIS (1823-96). A French historical, genre, and portrait painter. He was born at Maromme (Seine-Inférieure), and was a pupil of Picot and of the Ecole des Beaux-Arts. He began with portraits and historical genre, then turned to delineations of popular life, and finally to religious paintings. Although his draftsmanship is excellent, his color is poor, and he lacks power and temperament. Among his most noteworthy works are: "Assassination of Rizzio" (1849), Amiens Museum; "Death of Zurban" (1850), Ministry of the Interior; "Lesueur with the Carthusian Monks" (1855), acquired by the state; "St. Louis Washing the Feet of the Poor" (1863), Ministry of State; "Baptism of Clovis" and "St. Clotilde Helping the Poor" (1870), mural paintings in the church of St. Clotilde, Paris; "Candle of the Madonna" (1877), acquired by the state; "Triumph of Flora" (1879), decorative painting in the Hotel Continental, Paris; "The Servant of the Poor" (1880). Lille Museum;

"Victor Hugo on his Deathbed" (1886); "Palm Sunday" (1892), "Interior," Luxembourg; "Martyrdom of St. Denis," mural painting in the church of the Trinity; besides several decorative works in other churches and in the Exchange in Paris. He was awarded medals in 1850, 1855, 1859, 1861, and 1863, and decorated with the Legion of Honor in 1865.—His son **GEORGES** (1853-), a genre painter, studied under the father and also under Pils and Henri Lehmann. His cleverly composed works include such subjects as "Repast of the Mowers" (1877), "Poor Blind Man" (1881), and "The First-Born" (1883).

LAUGEL, lô'zhêl', AUGUSTE (1830-). A French author, born in Strassburg. He was early a mining engineer and afterward became secretary to the Duc d'Aumale. His works, on scientific, historical, and philosophical subjects, include: *Etudes scientifiques* (1859); *Science et philosophie* (1862); *L'Angleterre politique et sociale* (1873); *Grandes figures historiques* (1875); *Lord Palmerston et Lord Russell* (1876); *Louis de Coligny* (1877); *La France politique et sociale* (1877); *Henri de Rohan* (1889); etc. In 1912 he published a volume of poetry, *Flammes et cendres*.

LAUGERIE BASSE, lôzh'rê' bâs. A famous prehistoric station in the valley of the Vézère, Dordogne, France. See PALEOLITHIC PERIOD.

LAUGHING GAS. See ANÆSTHETIC; NITROGEN; NITROUS OXIDE.

LAUGHING GULL. A rather small American gull (*Larus atricilla*), so called from its hallooing cry. It is gray on the back and white beneath, with head black in mature summer plumage and feet reddish. Its home is in the tropics, from the Amazon northward; but in summer it strays up both coasts of America to Maine and central California. It is very numerous on the South Atlantic and Gulf coasts, breeds on sandy islets and beaches from Virginia southward, and rarely goes inland. Consult Elliott Coues, "Birds of the Northwest," in *United States Geographical and Geological Survey of the Territories, Miscellaneous Publications*, vol. iii (Washington, 1874), and Beebe, *Annual Report New York Zoological Society* (New York, 1903).

LAUGHING JACKASS, or KOOKABURRA. See DACELO.

LAUGHING PHILOSOPHER, THE. A title given to Democritus (q.v.).

LAUGHLIN, lâf'lin, JAMES LAWRENCE (1850-). An American economist, born at Deerfield, Ohio. In 1873 he graduated with high honors at Harvard, where he took his Ph.D. degree three years later, and where he was instructor in political economy (1878-83) and assistant professor (1883-87). From 1887 to 1890 he was president of the Manufacturers' Mutual Fire Insurance Company of Philadelphia, for two years he was professor at Cornell, and in 1892 he became head of the department of political economy at the University of Chicago. He was a member of the Indianapolis Monetary Commission, organized in 1897, and prepared its report, one of the important documents in the history of American banking and monetary reform. In 1906 he lectured, by invitation, in Berlin, and in 1909 he served as delegate to the Pan-American Scientific Congress at Santiago, Chile. From 1911 to 1913 he was chairman of the Executive Committee of the National Citizens League for the Promotion of

a Sound Banking System. Under his efficient leadership the league contributed materially to removing the inertia and prejudice that had blocked the way to banking reform in the United States. Beside editing the *Journal of Political Economy* (after 1892), he prepared an abridgment of Mill's *Political Economy* (1884) and wrote: *The Study of Political Economy* (1885); *History of Bimetallism in the United States* (1886); *Elements of Political Economy* (1887; rev. ed., 1902); *Facts about Money* (1895); *Principles of Money* (1903); *Reciprocity* (1903), with H. P. Willis; *Lectures on Commerce* (1904); *Industrial America* (1906); *Latter Day Problems* (1909); *Banking Reform* (1912).

LAUGHTER (AS. *hleahtr*, from *hlæhhan*, Icel. *hlæja*, Goth. *hlahjan*, OHG. *Alahhan*, *lahhan*, Ger. *lachen*, to laugh; probably imitative in origin). A form of expression (q.v.) of certain emotions. In the smile, which genetically is probably a feeble successor of the laugh, the corners of the mouth are drawn upward and backward, and the cheeks are raised, by the contraction of the great zygomatic muscles; the upper lip is slightly raised; the upper and lower eyelids are somewhat approximated by the contraction of the orbicular muscles; and the eyes are brightened in consequence of their greater tenseness, which results from these muscular contractions or from the increased blood pressure within the eyeball. The "graduation" of the smile into the laugh is characterized by the enhancement and spread of the motor phenomena; the mouth is opened; there are deep inspirations, followed by short, spasmodic, expiratory movements, especially of the diaphragm; and the vocal cords are contracted, giving the typical sounds of laughter. In violent, spasmodic laughter the respiratory disturbances are increased; there are also circulatory changes (quickened pulse, congested face); glandular secretion (secretion of tears); distortions of the whole body, usually a throwing back of the head and a curving backward of the trunk; and involuntary and purposeless movements of the limbs.

The causes of laughter are not always easy of assignment. It seems to be primarily the expression of mere joy or happiness (notably in the case of children), yet it may be incited by what seem to be purely physiological agencies, e.g., tickling, cold, hysteria, and even some kinds of acute pain. The theories of laughter fall therefore into two classes—those that regard laughter as the expression of joy and those that regard as typical the laughter which follows tickle. Psychologically the characteristic of the former kind of laughter is the presence of a pleasurable emotion; if the situation fails to arouse the emotion, laughter does not occur. But there is disagreement as to the way in which laughter is brought about. Some authorities hold that the display of muscular excitement is to be explained in terms of the discharge of energy through the pathways of the nervous system. Laughter, it is said, may be produced by strong feeling of almost any kind; its movements are purposeless and thus symptomatic of uncontrolled nervous discharge. The overflow takes place along the easiest and most used routes, i.e., to the facial, articulatory, and respiratory muscles. Another type of theory attempts to trace the development of laughter genetically. The first semblance of laughter is found in the mimetic movements which express pleasure in

a sweet taste, or in the repetition by the replete child of the pleasurable act of sucking. The organic accompaniment (increased heartbeat, respiratory change, etc.) appears only when the pleasurable emotion has reached a certain degree of intensity, and it differs from other organic disturbances in that it is intermittent; laughter is spasmodic. This theory is obviously the better of the two, since it reduces laughter to an expressive movement (see **EXPRESSION**, **EXPRESSIVE MOVEMENTS**), and thus places it in a system along with all other expressive movements. The theories of the second class, those which regard as typical the laughter which follows tickle, start with an explanation of the well-known fact that tickle, when prolonged, arouses a widespread organic reaction.

(1) It is argued that, since tickle consists of intermittent light pressures, every such pressure sets up a reflex constriction of the small arterial blood vessels, which in turn diminishes the amount of blood pumped through them by the action of the heart. But there is a close connection between the nerves governing the blood vessels and the nervous centre which regulates breathing. Hence the intermittent arterial constriction is paralleled by an intermittent expiration, and we thus account for the intermittent character of laughter. This theory, however, has been criticized on the ground of the disproportion between the intensity of the stimulus and the resulting disturbance in consciousness, an objection which is met (2) by the hypothesis that there is a summation of intensities in the nervous centres. (3) The reflex response is also held to be a survival from some ancestral instinct; tickle is perhaps a relic of "anticipatory touch," and, as such, it necessarily possesses lively reflexes; for, when danger was announced only by contact, strong reactions of escape or resistance were necessary. (4) Again, the reflex disturbance of tickling is said to be conditioned not upon the peculiar characteristics of the initiatory sensation, but upon the mental attitude or disposition in which such sensations are received. Darwin, e.g., finds surprise or novelty to be the all-important factor, and thus reduces the tickle reflex to the expression of an emotion. Numerous objections may be found to these theories, although it is enough, perhaps, to point out that no one of them offers an explanation of the mimicry of laughter. Unfortunately, also, no theory has yet been proposed which is able to connect the one kind of laughter with the other. Laughter cannot always be regarded as the expression of joy, because tickle is often indifferent or even disagreeable. If we might assume that, at some time in the history of the race when sensitivity was less than it now is, tickle was always highly pleasant, then the laughter of tickle might be regarded as a survival. But there is little ground for such an assumption.

Another important problem is the determination of the nature of the situation which ordinarily gives rise to the expressive movements of laughter or, in other words, of the nature of the comic. Here, again, there is no want of theories. There are, first of all, what may be called theories of *degradation*. It is said that the joy of laughter results from a feeling of superiority when the object is placed in a ridiculous or grotesque position. We laugh at the dignified person who slips and falls. Some authors hold that the lapse from dignity is in

itself provocative of laughter, and that the feeling of superiority is not necessarily in question. Still others would say that the incongruity of the situation (Spencer's "descending incongruity") arouses the emotion. Secondly, there are theories of contrast. It is held that degradation implies a maliciousness which in reality is foreign to the spirit of laughter; it is enough to perceive some "unexpected incongruity." Schopenhauer, e.g., would say that the sight of the dignified person prone on the ground does not comport with our conception of dignity, in all other respects, however, the sufferer is still dignified; and the perception of the contrast makes us laugh. Bergson thinks that mirth results from the contrast between the stiffness of a mechanism and the suppleness of life, a man in falling obeys mechanical laws, while we expect him to be agile enough to keep his feet. Other authorities hold that "disappointed expectation" alone is enough to provoke laughter; we expect a man to stand upright, and when he fails to do so we laugh. It has also been pointed out that, just as we cannot contrast two things without turning first to the one and then to the other, so in the laughable situation there is oscillation between two ideas; we see the individual first as dignified, then as undignified, etc. This principle is offered in explanation of the spasmodic character of laughter and has been attached to the general theory of contrast. Finally, we may mention a view which finds the key to the laughable situation in the release of submerged (chiefly sexual) complexes. It is clear that, ingenious as any of these suggestions are, and wide as is the range of comic incident that they cover, we yet have, at present, no satisfactory psychology of the comic.

Bibliography. Ewald Hecker, *Physiologie und Psychologie des Lachens und des Komischen* (Berlin, 1873); Sir Charles Bell, *The Anatomy and Philosophy of Expression as Connected with the Fine Arts* (7th ed., London, 1893); Herbert Spencer, "The Physiology of Laughter," in *Essays: Scientific, Political, and Speculative* (3 vols., ib., 1901); L. Dugas, *Psychologie du rire* (Paris, 1902); James Sully, *An Essay on Laughter* (New York, 1902); Paolo Mantegazza, *Physiognomy and Expression* (3d ed., London, 1904); Sigmund Freud, *Der Witz* (Leipzig, 1905); Charles Darwin, *Expression of the Emotions in Man and Animals* (New York, 1910); H. L. Bergson, *Laughter* (ib., 1912); Boris Sidis, *Psychology of Laughter* (ib., 1913); Wilhelm Wundt, *Völkerpsychologie: Mythos und Religion* (ib., 1914).

LAUGHTON, la'ton, SIR JOHN KNOX (1830-1915). English writer on naval history, born in Liverpool and educated at the Royal Institution School, Liverpool, and at Cambridge. In 1853 he became an instructor in the navy. During the Russian War he served in the Baltic (1854-55) and in China during the second war (1856-59), in both instances with distinction. From 1866 to 1873 he was naval instructor at Portsmouth, and after 1885 he held the chair of modern history in King's College, London. In 1882-84 he served as president of the Royal Meteorological Society; in 1890 he was made an honorary fellow of Caius College, Cambridge; and Oxford and Cambridge gave him honorary degrees respectively in 1904 and 1913. Among his numerous books should be noted: *Physical Geography in its Relation to the Prevailing Winds and Currents* (1870); *A Treatise on Nautical*

Surveying (1872); *Studies in Naval History* (1887); *Nelson and his Companions in Arms* (1896); *Sea Fights and Adventures* (1901). His editorial work includes: *Letters and Dispatches of Lord Nelson* (1886); *Memoirs Relating to Lord Torrington* (1889); *Defeat of the Spanish Armada* (1894); *From Howard to Nelson—Twelve Sailors* (1899); *Recollections of Commander J. A. Gardner* (1906); *The Barham Papers* (3 vols., 1907-10).

LAUGIER, lô'zhyâ', AUGUSTE ERNEST PAUL (1812-72). A French astronomer. He was born in Paris and studied at the Ecole Polytechnique and at the observatory under Arago. He was elected member of the Academy of Sciences in 1843 and was afterward attached to the Bureau of Longitudes. He was especially well known for his work on the sun spots and on the solar equator; wrote *Recherches sur la rotation du soleil autour de son centre de gravité* (1841), *Découverte d'une nouvelle comète* (1842), *Sur les taches du soleil* (1842), *Recherches sur le pendule* (1845), *Sur la construction d'un cercle méridien portatif pour la détermination des positions géographiques* (1852); and contributed to the *Comptes rendus* of the Academy of Sciences.

LAULNE. See LAUNE.

LAUMONTITE (named in honor of its discoverer, Laumont). A hydrated calcium aluminum silicate that crystallizes in the monoclinic system. It is transparent or translucent (becoming opaque and pulverulent on exposure), with a vitreous lustre that is pearly on the faces of cleavage and white to yellowish gray and sometimes red in color. Laumontite occurs in cavities in amygdaloid, porphyry, syenite, trap, gneiss, and sometimes in veins in clay slate. The principal localities are the Faroe Islands, Greenland, Bohemia, Switzerland, the Hebrides, Nova Scotia, and in the United States at Phippsburg, Me., Bergen Hill, N. J., and the northern shore of Lake Superior. It is classed with the zeolites.

LAUN, loun, FRIEDRICH. The pseudonym of the German novelist Friedrich August Schulze (q.v.).

LAUNAY, EMANUEL LOUIS HENRI DE. See ANTRAIGUES, COMTE D'.

LAUNCESTON, lan'ston or lan'ston. Until 1838 the capital of Cornwall, England, on the Kensey, a tributary of the Tamar, 21 miles northeast of Bodmin (Map: England, B 6). It is a very old town, prominently associated with the history of Cornwall, and has remains of a Norman castle given by the Conqueror to the Earls of Moreton, in which George Fox, the Quaker, was imprisoned in 1656 for distributing tracts. The White Hart Hotel contains a fine Norman gateway, the sole relic of a famous priory of Augustinian canons. The old Cornish name for the town was Dunheved, and under that title it received its charter in 1555. The town owns a fine water supply, profitable markets, a public library, and sewage farm. Its grammar school dates from the reign of Edward VI. Pop., 1911, 4117.

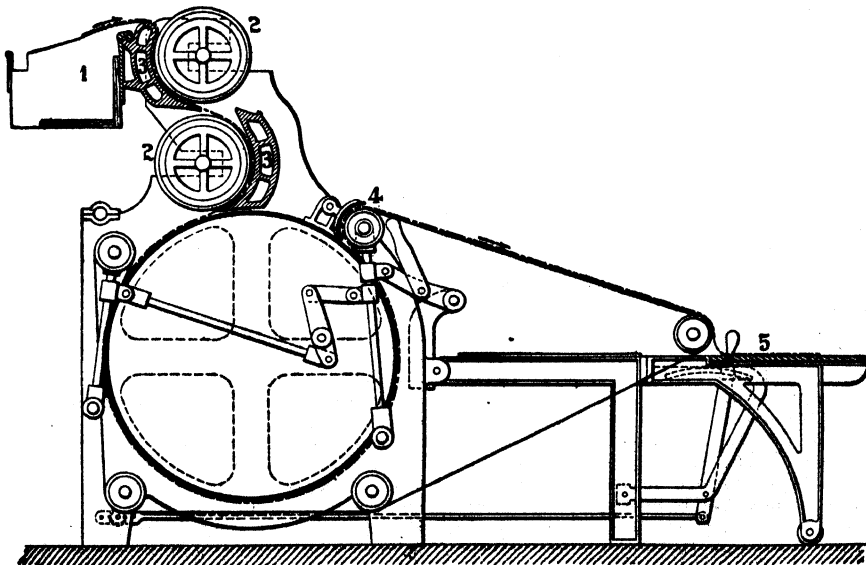
LAUNCESTON. The second city of Tasmania, the capital of Cornwall County, and the chief port of entry and mart of trade for the north of the island (Map: Tasmania, D 2). It stands at the junction of the North Esk and the South Esk, at the head of navigation of the Tamar, a tidal river, which, after a course of 40 miles, enters Bass Strait (q.v.) at Port Dal-

rymple. It is 133 miles by rail from Hobart, the capital. It is accessible to ships of 4000 tons, and vessels of 2000 tons can lie alongside the wharves. It carries on a thriving commerce with Victoria and South Australia. The United States has a resident consular agent. It owns its water works, was incorporated in 1858 and as a city in 1889. The chief buildings are the town hall, the post office, customhouse, and the Albert Hall. The city has a technical school and a school of mines, a good art gallery, and a number of fine churches. About 35 miles southeast rises Ben Lomond to the height of 4500 feet. Pop., with suburbs, 1901, 21,153; 1911, 23,726.

LAUNCH (OF. *lanchier*, *lancier*, Fr. *lancier*, It. *lanciare*, to hurl as a lance, from Lat. *lancea*, lance). The largest boat carried by a man-of-war; there are both steam launches and sailing launches. Large launches, 40 to 60 feet long, are carried by battleships and large armored cruisers. They are designed for use as picket or vedette boats, to guard against surprise by torpedo boats; and they are as fast as strength and limited size permit, some steaming 18 or 19 knots on trial. The sailing launch is a sloop-rigged boat, of very strong build, with a square stern and considerable depth and breadth of beam. Sailing launches, as now supplied to large ships of the United States navy, are of two types—one is propelled by oars or sails and the other by gasoline or heavy-oil (Diesel type) engines. These "motor-sailing launches," as they are called, have quite revolutionized the carrying of men and stores to and from ships. They are 32 to 45 feet long, have a speed of five to eight knots, are the best sea boats in the ship, and, as the engines are light and take up little space, they can carry nearly as many men or as great a quantity of stores as the ordinary sailing launch.

wooden blocks, placed 6 or 7 feet apart, and built up 3 or more feet from the ground, the tops of which lie in a line which slopes downward to the water at an angle of about five-eighths of an inch to the foot. The whole ship, therefore, when it is finished, slopes downward with this inclination and rests upon the blocks just mentioned and upon suitable timber shores. When the vessel is ready for launching, "ways" of timber and planking are laid down parallel to the keel, and at some little distance on each side of it, under the bilges of the ship; they extend into the water a considerable distance below high-water mark. A "cradle" is then built under the ship, of which the bottom is formed of smooth timbers resting upon the ways. Before launching, the under sides of these timbers and the upper sides of the ways are well greased, and the weight of the ship is transferred from the keel blocks to the cradle and ways. Timbers, called dogshores, are placed so as to resist the tendency of the ship to slide down until the right moment. When this arrives, at high water, the ceremony of launching and naming the ship takes place; the dogshores are knocked away, and the vessel glides stern-foremost into the water. As soon as the water removes the weight of the vessel from the cradle, the latter breaks up into pieces. Many large battleships and some other vessels have been built in dry docks and floated out when ready, instead of being launched. This system is economical, if the dry docks are not needed for other purposes. On the Great Lakes the practice of launching ships sidewise is very common. In the case of large vessels it is now not unusual to replace the dogshores by hydraulic apparatus and to fit hydraulic jacks at the head of the ways to insure the starting of the cradle when the holding gear is released.

LAUNDRY MACHINERY AND INDUSTRY



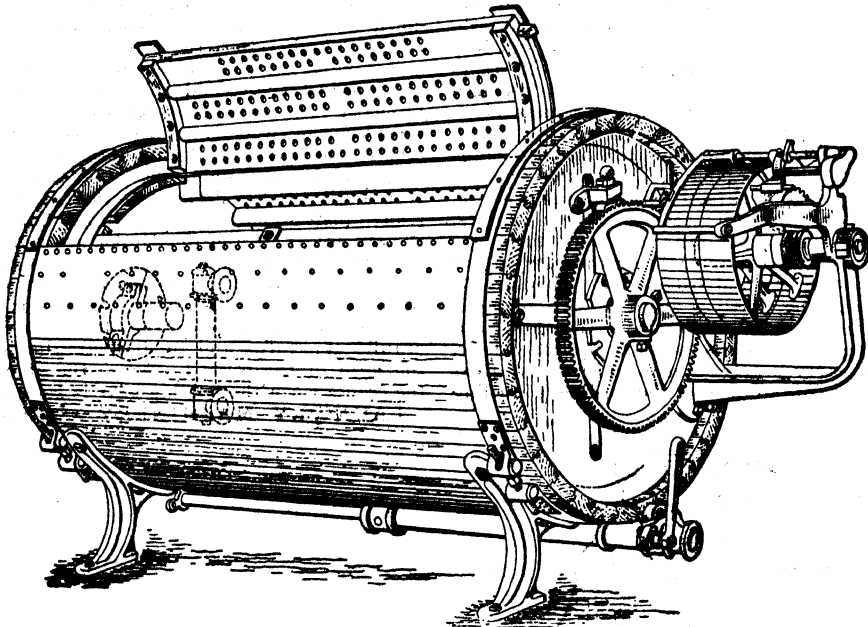
SECTIONAL VIEW OF MANGLE.
1. Feed box. 2. Cover rolls. 3. Steam closets. 4. Scraper. 5. Discharging table.

LAUNCH, LAUNCHING. The process of removing a vessel from the land to the water. The keel of a ship is laid upon a series of (from ME. *launder*, *launder*, *lander*, washer-woman, from OF. *lavendier*, *lavandier*, washer-man, from Lat. *lavandus*, gerundive of *lavare*,

to wash). The mechanical appliances used in steam laundries include the wheeled truck for carrying the clothes from one machine or appliance to another, the washing machine, the drying apparatus, mechanical sprinklers, starching machines, and, in addition to the mangle and ordinary ironer, a multitude of specially shaped machines for ironing sleeves, collars, and cuffs, for finishing the edges of collars, and for fluting ruffles.

The quality of water used in a laundry is of great importance. If the water is hard, muddy, or colored, a special plant for softening or filtering may be necessary. A large amount of steam is required, both for motive power and for heating the water. In a large laundry or in a hospital the disinfector is the first consideration and is a most important appliance. Here in a jacketed container of steel the clothes are submitted under a partial vacuum to high-

wringer, then placing them in a centrifugal dryer; or the entire operation may be performed in a hydro-extractor revolving at high speed. (See DRYING MACHINES.) The drying in the largest laundries as well as in well-equipped smaller plants is usually done in an artificially heated drying room or drying closets. These are of various forms and degrees of elaboration, with careful provision for heating and the circulation of air by mechanical draft, as the moist vapor-laden air must be withdrawn and dry air driven in to take its place. This is accomplished by power-driven fans. The handling of the clothes is also effected mechanically in certain installations. The arrangement of closets, horses, etc., varies with the size and nature of the plant. *Ironing machines*, though of many different forms, generally operate upon the same principle, which is that of the calender. (See CALENDERING.) A hard surface or



POWER WASHING MACHINE.

pressure steam at a temperature exceeding 300° F. The steam is then conducted to the fire of the boiler where it was generated. The clothes are then subjected to the action of air at atmospheric pressure at steam temperature. Next come the washers, of which two general types are in use, revolving and stationary. In the first the revolution of closed cylinders keeps the clothes in motion; in the second the cleansing is performed by the strokes of mechanically driven plungers. The boiling, rinsing, and bluing may all be performed in the washer or in another tub. The water is heated by steam, and sometimes the boiling is done under steam pressure, in which case the boiler must be especially strong; in fact, it is often made of $\frac{1}{4}$ -inch boiler plate and strong enough to resist a pressure up to 50 pounds. Various valves, starting and other devices in the interest of safety, are provided in view of the limited intelligence of many of the operatives. *Drying* is effected by passing the clothes through a

trough of carefully polished metal, heated by steam, gas, or electricity, revolves close to a second hard surface, which is usually covered with a felt padding and a cotton sheet. On the latter surface the article to be ironed is so placed that it is brought into close contact with the hot revolving cylinder of metal, the padded cover providing for such inequalities of surface as seams and hems. The most familiar form is the *mangle*, designed for ironing sheets, towels, and other articles of uniform shape and thickness. The principle is capable of endless adaptations, however, which fits it for ironing specially shaped garments, such as shirt bosoms and bodies, cuffs, collars, and sleeves. For such pieces as require starching there are specially constructed jacketed starch cookers to make the starch. Various types of machine starchers are used for different-shaped articles.

Owing to the large number of women employed in modern steam laundries, these establishments have received considerable attention from safety

engineers and welfare workers, and the modern tendency is to surround the moving machinery with every possible safeguard and to secure most sanitary conditions of operation and maintenance. Likewise the power question is important, as whether electric driving or shafting should be used is often a consideration. Electricity, of course, furnishes an ideal source of power with its self-contained motors, and now not only large laundries but even private laundries are being equipped with small-sized machines designed to reduce manual labor. These include electrically driven washing machines, mangles, electric irons, and other appliances, all of which result in neatness and labor saving, if not always in economy. Many devices of this kind are manufactured by the large supply companies and are often distributed by local central stations.

Laundry Industry in the United States. The thirteenth census of the United States, published in 1913, reported that the laundry industry from the returns received for the year 1909 included 5186 establishments, which gave employment to 124,214 persons and paid out \$53,007,747 in salaries and wages, \$17,693,360 for materials, and \$14,483,497 for miscellaneous expenses. The receipts for the year were reported as amounting to \$104,680,086. Naturally the laundry industry flourishes most in the cities and States of the densest population, and local conditions and customs govern. The average number of wage earners, 109,484, were divided into 31,479 males, of whom 268 were under 16 years of age, and 78,005 females, of whom 675 were under 16 years of age. These employees were distributed in establishments where the prevailing number of hours of labor was specified as follows: working 48 hours and under, 9216 employees; between 48 and 54 hours, 17,285; 54 hours, 20,790; between 54 and 60 hours, 24,864; between 60 and 72 hours, 598; 72 hours and over, 147. Of the total number of laundries covered by the census about 22 per cent were under corporate ownership; but these gave employment to about one-half of the wage earners and reported about one-half of the total received for work done during the census year. The laundries whose receipts for work done were \$100,000 and over as reported numbered 140, or 2.7 per cent of the total number of establishments, receiving \$21,489,526, or 20.5 per cent of the total amount. There were 1346 establishments whose receipts were between \$20,000 and \$100,000 and 2359 of which the receipts were between \$5000 and \$20,000. In no case did a laundry report receipts amounting to as much as \$1,000,000. The six cities in which 2000 or more persons were engaged in the industry, or in which receipts for work done during the year amounted to \$2,000,000 were, in the order of their importance by receipts for work done, Chicago, New York, Philadelphia, San Francisco, Los Angeles, and St. Louis. Although the population of New York was more than double that of Chicago, the receipts for laundry work done in steam laundries were only about three-fourths as great.

Bibliography. Consult Sidney Tebbutt's paper on "Steam Laundry Machinery," read in 1899 before the Institution of Mechanical Engineers of Great Britain and reprinted in *Cassier's Magazine* (London and New York) for February, 1899; also a paper by F. J. Johnson on "Large Steam Laundries," in the same maga-

zine for August, 1911. Rothery and Edmonds, *The Modern Laundry* (London, 1909), is a comprehensive manual of British practice.

LAUNE, lôn, or **LAULNE**, lôn, **ETIENNE** DE, or **DELAUNE**, de-lôn' (1518-c.1595). A French Renaissance engraver, born in Paris or perhaps at Orléans. He was originally a goldsmith and medalist and is supposed to have been aided by Cellini during the early part of his career. Afterward he joined the Reformers and spent the remainder of his life at Augsburg and then at Strassburg, where he died. His earliest dated engraving is 1561. His work shows the influence of the Italian school of Fontainebleau, and, owing probably to his training as a medalist, his best prints are small and highly finished. They display great taste and ingenuity and were intended as designs for armorers' and goldsmiths' work, including medals, money, jewelry, and plate; some of these are still to be seen at the Louvre. His larger plates, mostly after the Italian masters, are insipid. His son Jean was associated with him in his later works.

LAUNFAL, SR. A knight of the Round Table and steward of King Arthur. His story is the subject of a metrical romance by Thomas Chestre in the time of Henry VI and of James Russell Lowell's *Vision of Sir Launfal*.

LAUNITZ, lou'nits, **VLADIMIR VON DER** (?-1907). A Russian soldier and public official. During the Turkish War of 1887-88 he was decorated for bravery, and for three years he was Governor of Tambov. In January, 1906, he was appointed prefect of police of St. Petersburg (now Petrograd), and proved so zealous in repressing revolutionary agitators that he received the thanks of the Czar. As a result of the attempt on the life of Vice Admiral Dabassov and of the assassination of Gen. Count Alexis Ignatiev, Launitz increased in severity, arresting through his secret police 588 persons accused of revolutionary activities on three days in December, 1906, at St. Petersburg. On Jan. 3, 1907, Launitz was shot and killed by a young man who in turn was immediately killed by an officer.

LAURA (Gk. λαύρα, alley, cloister; possibly connected with Lat. *lura*, mouth of a bag, or with Lith *lerwas*, narrow stream between high banks). A name given to a collection of cells in a desert, differing from a monastery, in which the monks all lived together. Each monk in the laura had his own cell and for five days of the week lived alone, his only food being bread and water. On the other two days the monks assembled to receive communion, after which they joined in a light repast. They were subject to severe rules. A meagre diet, silence, and solitude were required. The word was almost exclusively applied to the institutions in Palestine, as the laura of St. Euthymius, 4 or 5 leagues from Jerusalem; the laura of St. Saba, near the brook Kidron, now the convent of Mar Saba; and the laura of the Towers, near the Jordan. The first seem to have been founded by St. Chariton (died c.350), of which the oldest is that afterward known as the laura of Pharan. Consult R. Genier, *Vie de Saint Euthyme le Grand*, 377-473, and *Les moines et l'église en Palestine au Ve siècle* (Paris, 1909).

LAURA. The lady celebrated in the poems of Petrarch (q.v.).

LAURACEÆ (Neo-Lat. nom. pl., from Lat. *laurus*, laurel), **THE LAUREL FAMILY**. A family

of dicotyledonous plants, consisting of trees or shrubs, many of which are evergreen. The leaves are without stipules; flowers in panicles or umbels; perianth is 4 to 6 cleft; stamens twice as many as the perianth segments and opposite them; fruit a one-seeded berry or drupe; fruitstalk often enlarged and fleshy. This family contains about 40 genera and 1000 species, mostly tropical, the greatest number occurring in southeastern Asia and in Brazil. The laurel (q.v.) is the only European genus. Genera belonging to the United States are *Persea* (bay), *Sassafras*, *Litsea* (pond spice), and *Benzoïn* (spicebush). An aromatic and fragrant character pervades the family, which includes cinnamon, cassia, and other aromatic plants. Some species are valuable for their timber, as greenheart; some for their medicinal barks, as greenheart (bebeeru) and sassafras; some for their secretions, of which camphor is the most important; some for their fruit, as the avocado pear (q.v.). About 30 very remarkable species, tropical climbing parasites like dodder, forming the genus *Cassytha*, are usually included in this family, although sometimes separated as a distinct family. See Colored Plate of CALIFORNIA SHRUBS for illustration of California laurel (*Umbellularia californica*).

LAURANA, lou-râ'nâ, LUCIANO DA. An Italian architect of the early Renaissance. The dates of his birth and death are unknown, but there is record of his activity as a builder between 1468 and 1482. His name is derived from his birthplace in Dalmatia, and he was, perhaps, a pupil of Brunelleschi. His most important works, the ducal palaces at Urbino and Gubbio, were executed for Federigo of Urbino. He excelled his immediate contemporaries in the simplicity and nobility of his proportions, his work being hard to distinguish from that of his pupil Bramante (q.v.).

LAUREATE (Lat. *laureatus*, from *laurea*, laurel tree, from *laurus*, laurel), POET. A title received from the English crown by letters patent. There is no installation ceremony, but the newly appointed laureate is expected to attend a levee in court dress. It was formerly his duty to compose an ode on the sovereign's birthday, on the birth of a royal infant, on a national victory, and by request on many other occasions. The origin of the title has given rise to much speculation. It was customary among the Greeks to crown with the laurel (which was sacred to Apollo) a popular poet, and the practice was revived in the Middle Ages. Petrarch, e.g., was crowned with great solemnity at Rome (1341). At Paris, Oxford, and Cambridge, the laurel wreath was sometimes placed on the heads of scholars distinguished for learning or poetry. John Skelton (died 1529) received the honor from both the English universities and accordingly styled himself *Poeta Laureatus*. Attached to the households of the mediæval English kings were minstrels and poets. They were not, however, crowned; instead of this honor they received pensions. Chaucer received from Edward III a pension of 20 marks (1366) and afterward (1374) a pitcher of wine daily—one of the subsequent perquisites of the laureateship. But Chaucer never received an official appointment to the post, and his pensions were for diplomatic and other services. In his *Poets Laureate of England* Hamilton recognizes a group of "volunteer laureates," in which he includes Chaucer, Gower, Kay, Andrew Bernard,

Skelton, Robert Whittington, Richard Edwards, Spenser, and Samuel Daniel. There was no English poet laureate till the accession of the house of Stuart. By virtue of his pensions in 1616 and 1630 Ben Jonson came to be regarded as laureate; but the title, so far as is known, was never officially conferred on him. On Dec. 11, 1638, William D'Avenant received from Charles I a pension of £100 a year, but no title accompanied the grant. He was, however, assumed to be laureate, especially after the Restoration. So far as is known, the first English poet to receive the title of Poet Laureate by royal letters patent was John Dryden. The honor was conferred on him Aug. 18, 1670. Dryden's successors, with their terms of office, are: Thomas Shadwell (1689-92), Nahum Tate (1692-1715), Nicholas Rowe (1715-18), Laurence Eusden (1718-30), Colley Cibber (1730-57), William Whitehead (1758-85), Thomas Warton (1785-90), Henry James Pye (1790-1813), Robert Southey (1813-43), William Wordsworth (1843-50), Alfred Tennyson (1850-92), Alfred Austin (1896-1913), Robert Bridges (1913-).

Bibliography. Austin and Ralph, *Lives of the Poets Laureate, with an Introductory Essay on the Title and Office* (London, 1853); Edmund Malone, essay prefixed to *Works of Dryden* (ib., 1800); Walter Hamilton, *The Poets Laureate of England* (ib., 1879); id., contributions to *Notes and Queries* (London, Feb. 4, 1894); K. West, *The Laureates of England* (ib., 1896); Grolier Club, *Catalogue of an Exhibition of Selected Works of the Poets Laureate of England* (New York, 1901); W. F. Gray, *The Poets Laureate of England: Their History and their Odes* (London, 1914).

LAUREL (from OF., Fr. *laurier*, Prov., Sp. *laurel*, from Lat. *laurus*, laurel), *Laurus*. A genus of Lauraceæ, which, as now restricted, contains only a few species, the principal ones being the noble laurel, victor's laurel (*Laurus nobilis*), and sweet bay (*Laurus canariensis*), natives of Asia Minor, but widely diffused in the Mediterranean region, often bushes of 15 feet or less, but sometimes trees of 30 or even 60 feet high. The former has rather large, lanceolate, leathery, shining leaves, reticulated with veins, and axillary clusters of yellowish-white flowers of no beauty. The fruit is oval, bluish black, and about half an inch long. The leaves and the fruit, which are bitter, astrigent, and agreeably aromatic, were formerly much used in medicine as a stomachic and stimulant, but are almost out of use. The leaves, however, are sometimes used in cookery for flavoring. They contain a volatile oil (*oil of sweet bay*) and a bitter, gummy extractive. By the ancient Greeks the laurel was called daphne and was sacred to Apollo. Berry-bearing twigs of it were wound round the foreheads of victorious heroes and poets; and in later times the degree of doctor was conferred with this ceremony, whence the term "laureation." The noble laurel is common in shrubberies, but not nearly so common as the cherry laurel (q.v.). See BAY; and, for mountain laurel, see KALMIA.

LAUREL. A city and the county seat of Jones Co., Miss., 110 miles northwest of Mobile, Ala., on the Mobile, Jackson, and Kansas City, the Gulf and Ship Island, and the Queen and Crescent railroads (Map: Mississippi, G 7). It is a commercial and manufacturing city, having railroad shops, cotton mills, wagon

shops, and several large lumber mills. There are two beautiful parks, a fine city-hall building, and, near the city, the State Agricultural Farm. First settled in 1894, Laurel has adopted the commission form of government. The city owns and operates its water works. Pop., 1900, 3193; 1910, 8465; 1914 (U. S. est.), 10,711.

LAUREL, CHERRY See **CHERRY LAUREL**.

LAUREL, MOUNTAIN. See **KALMIA**.

LAUREL FAMILY. A group of aromatic trees or shrubs, chiefly tropical. See **LAURACEÆ**.

LAUREL HILL. A range in southwest Pennsylvania, separating the counties of Fayette and Westmoreland from Somerset (Map: Pennsylvania, C 7). In the South the range extends over the border into West Virginia. It is a ridge of the Alleghany Mountains, and its average height is over 2000 feet, it contains valuable deposits of bituminous coal.

LAUREL WATER, or **CHERRY-LAUREL WATER**. A flavoring for medicines, obtained by distilling a mixture of chopped and bruised leaves of the cherry laurel and water, after 24 hours' maceration and standardizing to 1 per cent strength of hydrocyanic acid; but, owing to the volatilization of the latter, its strength varies. It is prescribed medicinally in the United States, mostly as a flavoring agent for cough mixtures, but has been used as a sedative narcotic, in neuralgic pains, spasmodic cough, and palpitation of the heart—in short, in all the cases in which hydrocyanic acid (q.v.) is applicable. Death has occurred, with all the symptoms of hydrocyanic-acid poisoning, from its incautious use as a flavoring ingredient in creams and puddings.

LAUREMBERG, lou'rem-bêrk, JOHANN (1590-1658). A German satirist. He was born and educated at Rostock and, after travels in Holland, England, France, and Italy, and a course of medicine at Paris and at Rheims, became professor of poetry at Rostock in 1618. Five years afterward he went to the Danish *Ritterakademie* of Sorbe as professor of mathematics. He wrote, in Latin, a play, *Pompeius Magnus* (1610); in Greek, an epithalamium, *Κύπρις Πλέουσα*; but found his proper place in the Low German dialect. His most famous work is his witty and realistic *Veer olde beromde Scherzgedichte*. Consult: Johann Classen, *Ueber das Leben und die Schriften des Dichters J. Lauremberg* (Lübeck, 1841); J. F. T. Latendorf, *Zu Laurembergs Scherzgedichten* (Rostock, 1875); L. Daac, *Om Humanisten og Satirikerne* (Christiania, 1884); Hermann Weimer, *Laurembergs Scherzgedichte* (Marburg, 1899).

LAURENCE, FRENCH (1757-1809). An English lawyer, born at Bath. He was educated at Winchester School and at Corpus Christi College, Oxford, graduating B.A. in 1777 and M.A. in 1781. Subsequently he studied law at the Middle Temple, took the degree of D.C.L. at Oxford in 1787, and in 1788, having just been admitted to the College of Advocates, with Sir William Scott, he was chosen by the House of Commons as counsel to the managers of the prosecution of the impeachment of Warren Hastings. In 1796 he was appointed regius professor of civil law at Oxford, and from that year till his death he represented Peterborough in Parliament. His *Poetical Remains* was published, with those of his brother Richard, in 1872. His *Critical Remarks on Detached Passages of the New Testament* were of interest, but of no theological or literary value. There

is a brief memoir of his life in *The Epistolary Correspondence of . . . Edmund Burke and Dr. French Laurence* (London, 1827).

LAURENCE, RICHARD (1760-1838). A Church of England scholar. He was born at Bath and graduated at Corpus Christi College, Oxford, in 1782. He entered the ministry of the Church of England and delivered the Bampton lectures in 1804, after which he became rector of Mersham, Kent. In 1814 he was appointed regius professor of Hebrew and canon of Christ Church, Oxford. In 1822 he became Archbishop of Cassel. It was largely through his influence that Oriental studies, long neglected in England, were restored to their rightful place. It was also through his instrumentality that several interesting apocryphal works, often quoted by the fathers, but supposed to be lost, were recovered from the Ethiopic manuscripts. Among these were the *Ascension of the Prophet Isaiah* (1819) and the *Book of Enoch the Prophet* (1821). He published a new version of *First Eddras* (1820), also from the Ethiopic; also *Dissertations on the Logos of Saint John* (1808), *Critical Reflections upon Some Important Misrepresentations Contained in the Unitarian Version of the New Testament* (1811), *On the Existence of the Soul after Death* (1834), and many essays and sermons.

LAURENS. A town and the county seat of Laurens Co., S. C., about 75 miles west-northwest of Columbia, on the Columbia, Newberry, and Laurens, and the Charleston and West Carolina railroads (Map: South Carolina, C 2). It is located in a farming region and has two large cotton mills and a glass factory. Pop., 1900, 4029; 1910, 4818.

LAURENS, HENRY (1724-92). An American patriot of the Revolutionary period, descended from a family of Huguenots who fled to America after the revocation of the Edict of Nantes. He was born in Charleston, S. C., engaged in mercantile pursuits in Charleston and London, and later established at Charleston a prosperous business. He retired, however, in 1771 and traveled for some time in Europe. In the pre-Revolutionary controversies between the American Colonies and the British government he early identified himself with the Whigs or Patriots, although he asserted the constitutionality of the Stamp Act and discountenanced forcible opposition to the exercise of authority under such statutes. He was one of about 40 Americans who petitioned Parliament against the passage of the Boston Port Bill, most of the petitioners being South Carolinians. He was President of the Council of Safety of South Carolina and Vice President of the State, was sent as delegate to the Continental Congress in 1776, and became its President Nov. 1, 1777, which office he resigned Dec. 1, 1778. In 1779 he was sent to Holland, charged with the negotiation of a commercial treaty, but fell into the hands of the British, and was imprisoned in the Tower for 15 months. He was bailed out by Richard Oswald. Congress appointed him in 1781 one of the peace commissioners, and on Nov. 30, 1782, he signed the preliminary treaty in Paris, in company with Adams, Jay, and Franklin. The collections of the South Carolina Historical Society contain many of his papers, which were collected after his death. Consult: "Henry Laurens: Narrative of his Capture and Confinement in the Tower of London," in *South Carolina Historical Society*,

Collections, vol. i (Charleston, 1857); Frank Moore (ed.), "Correspondence of Henry Laurens of South Carolina," in *Materials for History* (1st series, New York, 1861); *Laurens' Petition and Letters*, privately printed by H. B. Dawson (Morristown, N. Y., 1866-67).

LAURENS, lō'răn', JEAN PAUL (1838-). A French historical painter, one of the most eminent of the later nineteenth century. He was born at Fourquevaux (Haute-Garonne), and was a pupil of the Ecole des Beaux-Arts at Toulouse and of Cogniet and Bida in Paris. His compositions, depicting for the most part tragic and often gruesome episodes, are intensely dramatic in style and spirited in execution and never fail to produce a deep impression, although their effect is frequently marred by an exaggerated realism and lack of harmonious color. Out of their considerable number may be mentioned: "Death of Tiberius" (1864, Toulouse Museum); "A Voice in the Desert" (1868, Orléans Museum); "Execution of the Duc d'Enghien" (1872, Alençon Museum), which established his reputation; "Popes Formosus and Stephen VII" (1872, Nantes Museum); "The Pool of Bethesda" (1873, Toulouse Museum); "St. Bruno Refusing the Offerings of Roger, Count of Calabria" (1874, Petit Palais, Paris); "The Interdict" (1875, Havre Museum); "Excommunication of King Robert the Pious, 1004" (1875, Luxembourg); "The Austrian General Staff around the Deathbed of General Marceau" (1877, Ghent Museum), one of his finest works, which received the medal of honor in the Salon; "Release of the Immured at Carcassonne, 1803" (1879, Luxembourg); "Vengeance of Pope Urban VI" (1886); "The Men of the Sacred Office" (1889, Luxembourg); "Napoleon and Pius VII at Fontainebleau" (1891). The Proclamation of the Republic in 1848" (1902, Petit Palais). His numerous and important decorative works reveal a style somewhat akin to Puvis de Chavannes, but less decorative and harmonious in color scheme and composition. For the Panthéon he painted in fresco "Two Scenes from the Death of Ste. Geneviève," marked by solemn grandeur and replete with religious feeling; for the Paris Hôtel de Ville, a number of historical compositions; for the capitol at Toulouse, three of his best works, including the ceiling "Toulouse against Montfort" (1899). His excellent illustrations for Thierry's *Récits des temps mérovingiens* and for *Faust* (the drawings for the latter are in the Luxembourg) also deserve special mention. A portrait of himself (1882) is in the Uffizi Gallery, Florence. In 1886 he was appointed professor at the Ecole des Beaux-Arts; in 1891 he was elected member of the Institute and president of the Société des Artistes Français, and in 1900 Commander of the Legion of Honor. Consult: J. C. Van Dyke, *Modern French Painters* (New York, 1896), Eugène Montrosier, "Jean Paul Laurens," in *Gazette des Beaux-Arts*, vols. xx, xxi (3d series, Paris, 1898-99); F. Thiollier, *L'Œuvre de Laurens* (ib., 1906); J. Valny-Bayasse, "Jean Paul Laurens," in *Peintres d'aujourd'hui*, No. 2 (ib., 1910).

LAURENS, JOHN (1753-82). An American soldier, the son of Henry Laurens (q.v.). He was born in South Carolina, was educated in England, and in 1777 entered the Continental army as one of Washington's aids. In this position he discharged many of the delicate duties of a private secretary, and his familiar-

ity with foreign languages enabled him to be of great service in conducting the necessary correspondence with European officers in the service. He is said to have participated in all of Washington's battles, in several of which, while fighting with the utmost bravery, he was severely wounded. Early in 1781 he was sent on a special mission to France and by appealing directly to the King, in spite of diplomatic precedents, succeeded in negotiating a loan. At Yorktown he served with reckless daring and in the following year, while on the staff of General Greene, was killed (August 27) in an insignificant skirmish on the Combahee River. His unusual abilities, coupled with his gallantry, his courtesy, and his chivalrous devotion to his country, made him a universal favorite and won for him the title of the Bayard of the Revolution. Washington said of him: "He had not a fault that I could discover, unless it were intrepidity bordering upon rashness." The army correspondence of Laurens, together with a brief memoir by W. G. Simms, was privately printed in 1867 by the Bradford Club (New York).

LAURENT, lō'răn', AUGUSTE (1807-53). A French chemist, born at La Folie. He studied metallurgy under Dumas, whose assistant he became at the Ecole Centrale des Arts et Manufactures. He was for some time chemist at the potteries at Sèvres and Luxemburg, taught chemistry at Bordeaux (1838-46), contributed to the chemistry of naphthalene, paraffin, and phenol, but is better known for his contributions to theoretical chemistry, especially his foundation (with Gerhardt) of the theory of types. See **CHEMISTRY**.

LAURENT, FRANÇOIS (1810-87). A Belgian historian and jurist. He was born at Luxemburg and became chief of division in the Ministry of Justice. From 1836 until his death he held the chair of civil law at the University of Ghent, where he became known as a champion of liberal and progressive ideas. His writings include his chief work, *Études sur l'histoire de l'humanité* (18 vols., 1855-70); *L'Eglise et l'état* (3 vols., 1858-62; rev. ed., 1865); *Principes de droit civil* (33 vols., 1869-78); *Droit civil international* (8 vols., 1880-81).

LAURENTIAN (lā-răn'shən) HEIGHTS, or THE LAURENTIDES. The name given to the plateau-like height of land which forms the divide between the streams running into Hudson Bay and the two great water systems of the St. Lawrence and the Mackenzie. (See **AMERICA**, Physical Map North America, Laurentian Plateau.) It has the shape of a horseshoe or crescent of vast extent, reaching from east Labrador to the Arctic Ocean surrounding Hudson Bay. Its average height is from 1000 to 3000 feet, and its surface is uneven, with a multitude of depressions occupied by lakes and some considerable areas of fertile land. The principal break through it is made by the Nelson River.

LAURENTIAN LIBRARY. See **FLORENCE**, *Educational Institutions*, **LIBRARIES**, *History*.

LAURENTIAN SYSTEM. A name given by Sir William Logan to a series of highly metamorphosed rocks, older than the Cambrian, which are strongly developed in Canada, especially in the region of the Laurentian Mountains. The system has received different values from various geologists, but the generally accepted classification limits it to the basal or fundamental complex of gneisses and granites

of the Archean group, which comprises also the Huronian system. See PRE-CAMBRIAN FORMATIONS.

LAURENTIDES, lə'rən-tidz. *Fr. pron.* lə'rən'téd'. A plateau in Canada. See LAURENTIAN HEIGHTS.

LAURENTIE, lə'rən'té, PIERRE SÉBASTIEN (1793-1876). A French historian and journalist, born at Hougla (Gers). He devoted his attention early in life to history and in Paris was appointed professor of rhetoric at the Collège Stanislas in 1817 and assistant professor of literature at the Ecole Polytechnique in 1818. In 1822 he was appointed inspector general of public education. In addition to articles for the journal *La Quotidienne*, of which the most famous is his essay "Sur la liberté fondée sur le droit divin," he published many works on history. The best known is his *Histoire de France* (1841-43).

LAURENTIUS, lə-rən'shī-tis. Antipope, 498. He was rival to Symmachus, elected on the same day in Rome. He represented the party desirous of keeping on friendly terms with Constantinople and accepting the Henoticon of the Emperor Zeno (q.v.); while Symmachus represented the party opposed to such a course. Both sides had excellent leaders; the clergy apparently more generally favored Symmachus. They agreed to appeal to the Arian King of Italy, the Ostrogoth Theodoric at Ravenna, and he decided in favor of Symmachus. The followers of Laurentius kept up a hopeless and bloody struggle, but are not heard of after 501.

LAURENTIUS VAL'LA. See VALLA.

LAURENTUM. A very ancient town of Latium (q.v.), about 16 miles southeast of Ostia and near the modern Tor Paterno. In Roman legend it was the capital of King Latinus, who welcomed Æneas on his arriving in Italy. It was of some commercial importance during the traditional kingly period, but was later abandoned and left in ruins. With the growth of Rome, however, it was afterward resettled and became a fashionable resort of the wealthy Romans, owing largely to its extensive laurel groves. Pliny the Younger (*Epistles*, ii, 17) describes with minuteness his beautiful villa at Laurentum, and the Emperor Commodus (180-192 A.D.) passed much time there. Under Trajan (98-117 A.D.) the towns of Laurentum and Lavinium were recolonized and united under the name Lauro-Lavinium.

LAURESTINUS. See LAURUSTINUS.

LAURIA, lou'rè-à. A city in the Province of Potenza, Italy, 7 miles south of the nearest railway station at Iaconegro which is 114 miles by rail southeast of Naples (Map: Italy, E 4). Situated on a steep slope 1821 feet above the sea, it is divided into an upper and a lower town, the former surrounded by walls. It manufactures leather and woolen cloth and rope, and the country produces grain, wine, fruit, and potatoes. Pop. (commune), 1901, 10,099; 1911, 9769.

LAURIA (LURIA or LORIA), RUGGIERO DI, or ROGER DE (died 1305). The greatest naval commander of the Middle Ages and one of the greatest in history. It is believed that he was born in the castle of Lauria in the Italian city of the same name in Basilicata, near the border of Calabria. The date of his birth and his early career are unknown. His father was a supporter of Manfred, King of Sicily. In 1282 occurred the Sicilian rebellion (called the Sicilian Ves-

pers) against the cruelty of the representatives of Charles of Anjou, who had conquered the island after the death of Manfred. Peter III of Aragon, who claimed Sicily in right of his wife, was invited by the nobles to come and fight for the crown. In 1282 he proceeded to Sicily, accompanied by Lauria, who had been placed in command of the naval forces, and eventually he conquered the island. In the 17 years that Lauria was in command of the Aragon fleets he fought a greater number of important battles than any admiral in history and was never defeated. In 1283, off Malta, he overcame and dispersed a French force in the service of Charles of Anjou. In 1284 he defeated the Angevin fleet in the Bay of Naples, capturing Charles of Salerno, the Angevin heir apparent, who was afterward kept in captivity for many years. In 1285 the French King, Philippe le Hardi, endeavored to create a diversion in favor of Charles by invading Catalonia and Aragon. Lauria, hastily recalled from Sicily, prosecuted on the Spanish coast one of the most brilliant campaigns in history. The French troops were strenuously resisted and compelled to rely upon their fleet for support and supplies. This fleet was greatly superior in strength to Lauria's force, but, in order to control the whole coast, it was much spread out. On Sept. 9, 1285, Lauria fell suddenly upon the French centre near the Hormigas, utterly demolishing it, sinking the vessels by ramming, and destroying the *personnel* by a cloud of bolts from the very numerous, heavy, and efficient crossbows which he had mounted upon the rails of his vessels. Lauria then proceeded to Rosas, lured the French squadron outside by hoisting French colors, and defeated it in an equally decisive manner. These and some minor operations which followed destroyed the French naval power so completely that it did not recover for many years, and compelled the immediate retreat of the French from Aragon territory. During the retreat the French King died.

Lauria was now able to return to Sicily. Peter died in 1286. He had left Aragon to his son James and the Sicilian Kingdom to another son, Alphonso, whom Lauria continued to serve. Alphonso died in 1291 and was succeeded by James, his younger brother Frederick (afterward Frederick III) acting as Viceroy. Hard pressed by the Angevins, James made peace by offering to give up the Kingdom of Sicily. But Frederick refused to surrender it. For a time Lauria supported Frederick, but as he had large estates in Valencia and was under many and great obligations to the kings of Aragon, he soon went over to James, who was now endeavoring to get possession of Sicily to fulfill his treaty obligations. Frederick punished this desertion by confiscating Lauria's Sicilian estates and putting his nephew to death. In two subsequent victories over the Sicilians Lauria took terrible revenge. But the operations of Frederick on land were more fortunate than those on the sea, and the victories of the naval commander, decisive though they were, did not control the outcome. The Treaty of Caltabellotta, in 1302, ended the war. In 1303 Lauria retired to his estates in Valencia, and in 1305 he died. Unfriendly critics have accused Lauria of ferocity and cruelty; but such were the common attributes of all conquerors of those days, and it does not appear that he was any more

inhuman than his enemies. Consult: *Chronicle of Ramon Muntaner* (1265-1336), edited by Karl Lanz (Stuttgart, 1844); Michele Amari, *Guerra del Vespro* (8th ed., 2 vols., Florence, 1876); Charles de la Roncière, *Histoire de la marine française*, vol. i (Paris, 1899); and the various histories of the Sicilies and of Aragon.

LAURIAN, lău're-ă-n', AUGUST TREBONIU (1810-80). A Rumanian philologist and author. He was born near Hermannstadt, Transylvania, was educated at Klausenburg and Vienna, in 1844 was appointed a professor of philosophy in the College of St. Sava at Bucharest, and in 1847 a councilor of education. In 1848 he took active part in the political disturbances in Transylvania. He was appointed superior councilor of education in Moldavia in 1851 and general inspector of education and university professor at Bucharest in 1859. In 1867 he was elected to the Rumanian Academy. He founded and with Bălcescu edited the *Magazin Istoric al Daciei* (The Dacian Historical Magazine, 5 vols., 1845-48), in which appeared much of his best work. His *Istoria Românilor* (1853) and other volumes, on either Roman or Rumanian history, which he regarded as identical and continuous, are often defective through lack of special knowledge. His *Tentamen Criticum in Originem Linguae Romanae* (1840) teemed with perversions due to the author's false idea of patriotism. Like his *Dictionarul limbii române* (3 vols., 1871-76), an academic publication, and its supplement, *Glosar de vorbe străine* (Glossary of Foreign Words, 1871), it extends the Latinist historical method of Cipariu, emphasized by its adherents as the scientific in contradistinction to the anarchistic, or new, school. The Dictionary and Glossary abound in absurd etymologies and advocate a spelling and vocabulary which, had they been adopted, would have rendered literary Rumanian wholly unintelligible to the common people.

LAURIC ACID (from Lat *laurus*, bay tree, laurel), also called LAUROSTEARIC or PICHRURIC ACID, $C_{27}H_{52}O_2$. A fatty acid first described by Marsson in 1842. It occurs as a glyceride, laurostearin, in the fat of the bay tree and in the solid fat and volatile oil of pichurim beans. It occurs in connection with myristic acid in the berries of *Myrica gale* and in other plants. It also exists in connection with other fatty acids or their glycerides in spermaceti and in coconut oil. It may be prepared from oil of bay by saponifying the oil with strong caustic potash, decomposing the soap with hydrochloric acid, and distilling the fatty acids thus set free *in vacuo*; the first portion passing over is almost pure lauric acid. Lauric acid is slightly soluble in hot water; it is readily soluble in alcohol and ether and crystallizes from the alcoholic solution in white, silky needles or translucent scales, which melt at about 43.5° C (110.3° F.). The laurates of the alkali metals and of barium are soluble in water. The other salts are insoluble or slightly soluble. The laurates of the alkali metals are much more soluble in salt water than the alkali metal salts of the other fatty acids; this is why "marine soap" is made from coconut oil. See SOAP.

LAURIE, lă'ri, ARTHUR PILLANS (1861-). A Scottish chemist and educator, son of the philosopher S. S. Laurie. He was educated at Edinburgh and at Cambridge, where

he was a fellow of King's College and in 1891 Cantor lecturer. In 1895 he became lecturer in physics and chemistry at St. Mary's Hospital Medical School and an assistant to the royal commission on secondary education, and later was made principal of the Heriot-Watt College, Edinburgh. In chemistry he did valuable work on the atomic weight of gold and on the electromotive force of copper, zinc, tin, and gold alloys, but is better known for his studies of oils and colors—he was examiner in oils and colors to the City and Guilds Institute (1898) and professor of chemistry to the Royal Academy of Arts. Laurie edited *The Teacher's Encyclopædia of Education* (1911) and wrote: *The Food of Plants* (1893); *Processes, Pigments, and Vehicles* (1895); *The Materials of the Painter's Craft* (1910); *The Pigments and Mediums of the Old Masters* (1914).

LAURIE, JOHN WIMBURN (1835-1912). A Canadian and British soldier and legislator. He was born in London, England, and after a military education served in the Crimean War (1854-56) and later in the Indian mutiny (1857-59) as staff officer of a field force. In both campaigns he received medals and promotion. He went to Canada in 1861, at the time of the Trent Affair (q.v.), was inspecting field officer of the Nova Scotia militia for five years, and served during the Fenian raids of 1866 and 1870, the Transvaal campaign (1881), the second rebellion in the Canadian Northwest (1885), and the Servo-Bulgarian War (1885-86). In 1887 he attained the rank of lieutenant general. He was a Conservative member of the Canadian House of Commons in 1887-91 and of the Imperial House of Commons in 1895-1906.

LAURIE, SIMON SOMERVILLE (1829-1909). A Scottish educator and philosopher, born in Edinburgh and educated at the high school and university of that city. He taught on the Continent for five years, in 1855 was secretary and visitor of schools on the educational committee of the Scottish church, and in 1872, when the authority of this committee was abrogated by the Education Act, he became secretary to the Endowed Schools Commission. He was a member of the Edinburgh University Court and president of the Teachers' Guild of England, and from 1876 to his retirement in 1903 was professor of the institutes and history of education in Edinburgh University. There also he was Gifford lecturer on natural theology in 1905-06. He wrote: *Philosophy of Ethics* (1866); *Primary Instruction in Relation to Education* (1867; 5th ed., 1898); *John Amos Comenius* (1881; 6th ed., 1898); *Ethica by Scotus Novanticus* (2d ed., 1891); *Medieval Education and Rise and Constitution of Universities* (1886); *Lectures on Language and Linguistic Method in the School* (1890; 4th ed., 1903), delivered at Cambridge; *Institutes of Education* (1892, 2d ed., 1899); *Historical Survey of Pre-Christian Education* (1895; 2d ed., 1900); *Training of Teachers and Methods of Instruction* (1901); *Studies in the History of Educational Opinions from the Renaissance* (1903); *Synthetica, Being Meditations Epistemological and Ontological* (2 vols., 1906), the Gifford Lectures.

LAURIE, lă'ri-ă, SIR WILFRID (1841-). A Canadian statesman. He was born of French-Canadian Catholic parents at St. Lin, Province of Quebec, Nov. 20, 1841. He received

seven years of academic training at L'Assomption College, at an early age having begun to learn the English language; studied law at McGill University, was called to the bar in 1864, and practiced his profession in Montreal and later at Arthabaskaville. At that time he did not heartily support confederation, and, though a decided Liberal, he had Protectionist leanings on the tariff question. Elected a member of the Quebec Legislature in 1871, his first speech in that body won him instant recognition as an orator. In 1874 he entered Dominion politics, being elected to the House of Commons, first for Drummond and Arthabaska (1874-77), and in 1878 for Quebec (city) East. He was Minister of Inland Revenue (1877-78) in the Mackenzie administration, upon the defeat of which in 1878 he began his term of 18 years in Opposition, 9 years as a private member, and 9 years as Liberal leader, a position to which he was elected in 1887. The demands upon him were exacting, especially on account of his race and religion, but he met them with a resourcefulness that proved his ability as a parliamentarian and his capacity for the higher popular appeal of political leadership. His eloquence, both in French and English, contributed largely to his success. In the latter part of his Opposition term he was confronted with the issue of religious education, which he met with courage. In Manitoba (q.v.) the question of separate schools had long vexed the province and in 1896 had become important in the federal elections. The Roman Catholic bishops of his province ordered the faithful to vote against Laurier, because he opposed the forcing of separate schools on Manitoba; but the firm attitude of the Liberal leader was sustained by popular vote. He became the first French-Canadian Premier of the Dominion, and for a longer continuous period than any other Canadian first minister (1896-1911). His premiership was notable for the expansion of trade and transcontinental railway building, the development of agriculture, and the growth of Canadian nationality within broad, freely chosen lines of imperialism, the latter term implying no more than a loose confederacy of nations under the British flag. Laurier thus aided in promoting British connection, while increasing the initiative of Canada as a part of the Empire. He left the protective tariff unchanged in its essential features and won the gratitude of Britain by giving her manufactures a preference of 33½ per cent (1900). He took part, though without success, in the attempt to settle outstanding disputes with the United States through the Joint High Commission (1898-99). He represented Canada at the Colonial Trade Conference in London in 1902, and at Imperial conferences in that city in 1907 and 1911. During his administration a Canadian Envoy cooperated on equal terms with the British Ambassador in the diplomatic settlement of a dispute with Japan (1907). In 1911 his government's advocated a measure of trade reciprocity with the United States, was defeated, and resigned office. Laurier received many honors from abroad, including degrees from the leading British universities and the freedom of several British cities. He was in 1897 made a member of the Imperial Privy Council and was knighted (G. C. M. G.). He was a prominent figure among the colonial officers at Queen Victoria's Diamond Jubilee

(1897), the coronation of Edward VII (1902), and the coronation of George V (1911). After his resignation he continued to lead the Liberal Opposition. Upon the outbreak of the European War in 1914 he ardently supported the parliamentary vote in aid of Great Britain, and in the urgent assembling of military contingents to be sent abroad he appealed with especial emphasis to his French-Canadian fellow countrymen. In 1868 he married Miss Zoe Lafontaine, of Montreal. Consult Sir J. S. Willison, *Sir Wilfrid Laurier and the Liberal Party* (London, 1903), and L. O. David, *Laurier et son temps* (Montreal, 1905). For the literary significance of his speeches, see CANADIAN LITERATURE.

LAURION, or **LAURION** (Lat., from Gk. *Λαύριον*, *Λαύρειον*, *Laureron*). A promontory in southeast Attica, Greece, projecting into the Aegean Sea, celebrated for its mines (Map: Greece, E 6). They seem to have been known in prehistoric times, and there are numerous Mycenaean remains throughout this region. It is also possible that they were later worked by the Phœnician traders. But they first became important towards the end of the sixth century B.C., with the growth of Athenian power and commerce. During the fifth and fourth centuries they were of the greatest value to the commercial supremacy of Athens. At the suggestion of Themistocles the Athenians devoted the revenues of the mines to the building of a navy; it was this navy that long made Athens the leading power in Greece (see GREECE, *Ancient History*), and that won the day at Salamis (q.v.). But with the increased supplies of the precious metals which resulted from the Eastern conquests of Alexander the Great the importance of the mines at Laurion rapidly declined, and about the beginning of the Christian era they were abandoned. The mines were the property of the Athenian state, which leased them to citizens, who worked them by slave labor. The chief product was silver, though lead was also obtained in large quantities, and the yield of minium (red oxide of lead) and ochre was of appreciable value. The mines were worked by cutting narrow galleries in the rock, and the products were separated by crushing or grinding, washing, and melting. In 1860 a Marseilles company bought the right to work over the heaps of refuse, from which much lead was extracted. In 1869 a dispute arose over the limitations imposed by the contract, and after a protracted lawsuit the company in 1873 purchased a large tract of land. Since then two large and three smaller companies have occupied the territory and carry on profitable operations in the production of lead, cadmium, and manganese. Silver, the most important product in ancient times, is of little value at present. The mines are connected by rail with Athens through the port of Laurion or Ergasteria, which has a good harbor, workshops, smelting furnaces, and a population (1909) of 5100, according to Baedeker. Consult Edouard Ardaillon, *Les mines du Laurion dans l'antiquité* (Paris, 1897); Baedeker, *Greece* (4th Eng. ed., Leipzig, 1909); C. P. Oikonomos, in *Kaiserlich deutsches archaologisches Institut, athenische Abtheilung*, vol. xxxv (Athens, 1910); J. P. Mahaffy, *Rambles and Studies in Greece* (7th ed., New York, 1913).

LAURISTON, *lô'rî'stôn'*, JACQUES ALEXANDRE BERNARD LAW, MARQUIS DE (1768-1828). A French marshal, born at Pondicherry, India. He was educated at the Ecole Militaire in Paris

and at Brienne, where he was a comrade of Napoleon. He entered the army in 1785 and from 1792 was with the Republican armies in the Netherlands and on the Rhine. He was an artillery colonel in 1795 and in 1800 became aid-de-camp to Napoleon, who sent him to England in 1802 to transmit the articles of the Peace of Amiens. He was made brigadier general in 1805 and Governor-General of Venice in 1807. At Wagram (1809) his artillery at a critical moment crushed the Austrian centre and gained the victory. He was Envoy Extraordinary to St. Petersburg in 1811, took part in the Russian campaign of 1812, fought at Lützen and Bautzen, and was taken prisoner at Leipzig (1813). After the Restoration Louis XVIII made him a general of division (1815) and gave him the title of Marquis (1817). He became a marshal of France (1820) and took part in the invasion of Spain in 1823.

LAURUM. A mining district of Greece. See LAURION.

LAURIUM, lă'ri-ŭm (formerly CALUMET). A village in Calumet Township (q.v.), Houghton Co., Mich., 17 miles north by east of Houghton, the county seat, on the Mineral Range and the Copper Range railroads (Map: Michigan, A 1). It is situated on Keweenaw Peninsula, in one of the richest copper districts of the United States and in the vicinity of several of its most famous mines. Pop., 1900, 5643; 1910, 8537; 1914 (U. S. est.), 9770.

LAUROSTEARIC (lă'rô-stê-ăr'ik) **ACID.** See LAURIC ACID.

LAURUSTINUS (Neo-Lat., from Lat. *laurus*, laurel + *tinus*, sort of plant), or **LAURESTINUS** (*Viburnum tinus*). An ornamental shrub, native of the south of Europe and the north of Africa, which belongs to the Caprifoliaceæ, or honeysuckle family. It is an evergreen, with dark, shining, leathery leaves and with corymbs of small whitish flowers, which appear in winter or early spring and are followed by small, blackish-blue, acid berries, which inflame the mouth and have drastic, purgative properties. Birds, however, eat them with avidity. Since the laurustinus cannot endure much frost, it is grown in northern latitudes as a greenhouse or house plant for winter flowering. Sometimes it is planted out in summer. See VIBURNUM.

LAURVIK, lour'vêk, or **LARVIK**. A seaport and watering place of Norway, situated on the Larvikfjord, at the mouth of the river Laagen (Map: Norway, D 7). There are sulphur and iron springs in the neighborhood which attract visitors, and the town has a growing reputation for its mud baths. The chief trade is in wooden ware. Pop., 1901, 10,664; 1912, 10,105.

LAUSANNE, lô'zân' (Lat. *Lausonium*). Capital of the Swiss Canton of Vaud, situated on the Flon, on the lower slopes of Mont Jorat, about 1 mile north of Lake Geneva (Map: Switzerland, A 2). Improvements, including the filling in of the Flon valley which separates the old and new portions of the town, have destroyed much of its natural beauty. The valley is spanned by a two-story viaduct, known as the Grand Pont, connecting the quarters of Saint-François and Saint-Laurent. The imposing cathedral of Notre Dame, built in 1235-75 and restored in 1906, is Gothic. It is noted as the scene of a disputation in 1536 in which Calvin, Farel, and Viret participated, and which resulted in the secession of the canton from the

Catholic church. On the handsome Place de la Riponne stands the Palais de Rumine, erected in 1904, containing a museum of industrial art, natural history, and fine arts. On a hill west of the town stands the National Supreme Court of Appeals, a handsome Renaissance building. The old town hall, and the prison, modeled after the Pennsylvania system, the theatre, the new post office, and the cantonal bank, are also notable buildings.

The educational institutions of Lausanne are numerous and excellent. The university, founded in 1537 as an academy for Protestant ministers and constituted a university in 1891, has five faculties and, in 1913, 1331 students. There are schools for instruction in agriculture and viticulture, a Protestant theological school in connection with the cathedral with a library of 45,000 volumes, and many girls' boarding schools patronized by foreigners. The cantonal library had, in 1913, 280,000 volumes. Charitable institutions include asylums for the blind and insane. Manufactures consist chiefly of machinery, tobacco, chocolate, book printing, and sugar. There is some trade in grain and lumber and in the wines of the vicinity. The port of Lausanne is the adjoining town of Ouchy.

Lausanne (the Roman *Lausonium*) is a favorite place of sojourn for English and Germans and has been the residence of many distinguished persons, including the historian Gibbon. Pop., 1900, 46,407; 1910, 63,926. The inhabitants are mostly Protestants and speak French. Lausanne was probably founded at the beginning of the sixth century. It became the seat of a bishopric in 590. It remained under the rule of its bishops (who attained princely rank in 1125) until the introduction of the Reformation in 1536, when it came under the control of Bern. In 1803 it was made the capital of the newly created Canton of Vaud.

LAUSANNE, HENRY OF. See HENRICIANS.

LAUSER, lou'zêr, WILHELM (1836-1902). A German historian and essayist, born at Stuttgart. He studied at Tübingen and Heidelberg and spent five years in Paris as a journalist. He edited various papers and in 1896 became editor of the Berlin *Norddeutsche Allgemeine Zeitung*. His published works include: *Aus Spaniens Gegenwart* (1872); *Geschichte Spaniens von dem Sturz Isabellas bis zur Thronbesteigung Alfonsos XII.* (1878); *Unter der Pariser Kommune* (1878); *Kunst in Oesterreich-Ungarn* (1884); *Der erste Schelmenroman: Lazarillo von Tormes* (1889).

LAUSITZ, lou'zīts. A district in Germany. See LUSATIA.

LAUSONIUM, lă-sô'ni-ŭm. See LAUSANNE.

LAUSSEDAT, lô's'dă', AIMÉ (1819-1907). A French geodesist and astronomer. He was born at Moulins and studied at the Ecole Polytechnique (1840), in which, after active service in the engineers, he became professor of geodesy and astronomy (1856). Nine years afterward he was appointed professor of applied geometry at the Conservatoire des Arts et Métiers, and in 1881 became director of that institution. The adoption of Paris time for all France by the Law of 1891 was largely due to Laussedat's endeavors. He was elected president of the commission on aerial transportation, became known for his improvements in geodetic photography and astronomical instruments, and published *Leçons sur l'art de lever les plans* (1860) and *Recherches sur les instruments, les*

methodes et le dessin topographiques (2 vols., 1898-1903).

LAUT, AGNES CHRISTINA (1872-). A Canadian author. She was born at Stanley, Ontario, but in early youth removed to Winnipeg and was educated at Manitoba University. She became an editorial writer on the *Manitoba Free Press* in 1895, and a special correspondent for leading journals in the United States and Canada. Later she removed to New York and joined the staff of *Outing*. Her stories and descriptions of Canadian life, especially life in the Northwest, were widely read. Her publications include: *Cruising on the French Treaty Shore of Newfoundland* (1899); *The Lords of the North* (1900), *Heralds of Empire* (1902), *Story of the Trapper* (1902), *Pathfinders of the West* (1904); *Vikings of the Pacific* (1906), *The Conquest of the Great North-West* (1908), *Canada, Empire of the North* (1909); *Freebooters of the Wilderness* (1910); *The New Dawn* (1913); *Through our Unknown Southwest, the Wonderland of the United States* (1913).

LAUTERBRUNNEN, lou'tër-brun'en. A village and tourist resort in the Canton of Bern, Switzerland, 2620 feet above the sea, and 6½ miles southeast of Interlaken (Map. Switzerland, B 2). Pop. 1900, 2547; 1910, 3318. It is built on both sides of the White Lutschine, in a deep rocky valley, noted for its picturesque scenery and its number of springs, whence the name. Towering in the distance on the left is the Jungfrau and the right the Breithorn. In the neighborhood are the celebrated cascades of Staubbach and Trummelbach.

LAUTREC, lô'trêk', ODET DE FOIX, SEIGNEUR DE (1485-1528). A French marshal. He was the son of Jean de Foix and the brother of François de Châteaubriant, the celebrated mistress of Francis I. All his life a soldier, he fought under his cousin, Gaston de Foix, at Ravenna (1512), was present at Marignano (1515), took the Constable de Bourbon's place as Governor of Milan and ruled with great severity, was completely defeated by Prospero Colonna at La Bicocca (1522), and five years afterward, as commander of the army in northern Italy, re-established the French dominion there. He died of the plague during the siege of Naples. Brantôme calls him one of the great French captains.

LAU-TZÊ. See LAO-TSE.

LAUZON, lô'zôn', or **SAINT JOSEPH**, sän zhô'zhêf'. A town in Lévis Co., Quebec, Canada, on the south bank of the St. Lawrence River and on the Intercolonial and Quebec Central railways, 2 miles from Lévis and 5 miles east of the city of Quebec. It is connected by electric railway with Lévis, from which there is a ferry to Quebec. It has a shipbuilding industry, and its manufactures include window blinds, trunks and valises, boxes, and aerated waters. Pop., 1901, 3416, 1911, 3978.

LAUZON, lô'zôn', ARMAND LOUIS DE GONTAUT-BIRON, DUKE DE (1747-93). A French soldier, born in Paris. After a youth of furious dissipation he led in 1779 a successful expedition against the English in Senegal and Gambia and in 1780 came to America, where he fought at Yorktown. In 1788 he succeeded to the title of Duke de Biron and was a deputy to the States-General and the supposed agent of the Duke of Orléans. He was commander in chief of the Army of the Rhine in 1792 and of the Army of La Rochelle in 1793. After taking Saumur and defeating the Vendéans at Parthe-

nay, he resigned owing to machinations carried on against him by his subordinates. Accused before the Committee of Public Safety of having been too lenient in his treatment of the Vendéans, he was imprisoned, tried before the Revolutionary Tribunal for conspiracy, condemned Dec. 31, 1793, and executed the same day.

LAUZON, JEAN DE (1582-1666). French Governor of Canada. He early became interested in New France and was made president of the Hundred Associates, a company organized to further the settlement of the French dominions in America. He directed most of his energies to securing immense grants of territory for himself and for members of his immediate family, and in this way he procured for his son a tract of land extending for 60 leagues along the St. Lawrence with the exclusive right of fishing in that river, while for himself he secured the island of Montreal, which he afterward sold to the Jesuits. In 1651 he became Governor of New France. His administration of five years was weak and vacillating in policy. In 1656, shortly before the end of his second term, he returned to France, leaving the government in the hands of his son, De Charney, who soon followed his father's example, leaving a second substitute to direct the fortunes of New France.

LAUZON, lô'zôn', ANTOINE NOMPAR DE CAUMONT, DUKE DE (1632-1723). A French soldier, born in Gascony. He came to court about 1669 and won the favor of the young Louis XIV by his energy, shrewdness, and a certain swash-buckling carriage that differed favorably from the common courtier's demeanor. The King made him colonel of the royal dragoons, Governor of Berry, and maréchal de camp, and promised him the mastership of the ordnance. The favorite's overbearing conduct brought him a term in the Bastille, but he was soon released and mollified with the command of the army in Flanders (1671). Louis intended to marry Lauzon to Mademoiselle de Montpensier, La Grande Mademoiselle, granddaughter of Henry IV, but court intrigues seem to have prevented the marriage, though there is some authority for believing that a secret marriage did take place some two years later. The enmity of Madame de Montespan sent Lauzon to the prison again at Pignerol in 1671, and there he stayed till 1676, when he was released and banished. He was intimate with the "Man in the Iron Mask" while imprisoned. In 1680 he obtained permission to return to Paris. He went to England in 1688, returning in the same year after the Revolution, as escort to James II's Queen and infant son. Louis restored him to partial favor. In 1689 he led a French force to Ireland and fought for James II in the disastrous battle of the Boyne in 1690. In 1692 he became Duke, and three years later married Mademoiselle de Duford, a girl of 16.

LAVA, lä'va (It., stream). Molten rock material which is poured out at the surface of the earth either from volcanoes or in fissure eruptions. Fissure eruptions, while not numerous, have been exceptionally extensive, as in the Deccan of India, and the Snake River plains of the northwestern United States. The fluidity of lavas as they issue from the earth depends upon their chemical nature, but is also influenced by the accompanying vapors and gases which are often present in eruptions in large amounts. Owing to the presence of water

vapor, chlorine, and other "mineralizers," the temperatures of molten lavas are much lower than are required to produce fusion of the dry rocks. Lavas of siliceous nature usually have a pasty or ropy consistency and flow sluggishly, while basaltic lavas are usually fluid and flow freely. The former build up volcanic cones of steep slopes, as in central France, whereas basaltic lavas form volcanic cones of gentle slopes, like those of Etna or the Hawaiian volcanoes. Some lavas decompose and disintegrate with amazing rapidity and form a fertile soil for the vine. Others, but slightly different in composition, present for centuries a firm unyielding surface to the elements. Lavas may be either compact or vesicular, sluggy, scoriaceous, or pumiceous. See IGNEOUS ROCKS; BASALT; DIKE; VOLCANO, PUMICE.

LAVAGE, lăv'aj, or as Fr., lă'vâzh'. Stomach washing is a procedure used by physicians for both diagnosis and treatment of certain gastric ailments. The simplest apparatus consists of a long rubber tube, perforated at one end and having a glass funnel connected to the other extremity. This tube is moistened and passed through the oesophagus into the stomach, the patient sitting upright with the head thrown back and assisting the passage of the tube by efforts at swallowing. From the incisor teeth to the lower portion of the stomach the average distance is, in the adult, 22 inches; and the tube should extend 3 feet beyond the teeth to allow of siphonage. From a pint to a quart of warm sterile water, or a weak alkaline solution, may be used for washing. This is poured into the funnel, and when the water is just about to disappear from the funnel the latter is quickly lowered, when the contents of the stomach will flow out again, the tube acting as a siphon. The stomach tube is employed to remove test meals, to gauge the rate of digestion, and to ascertain the acidity, quantity of mucus secreted, and other conditions existing in the diseased organ. As a method of treatment, stomach washing is useful in chronic gastric catarrh, in dilatation of the stomach, in acute poisoning, and in postoperative vomiting. In infants with acute indigestion and vomiting the measure is of great value, the size of the tube and quantity of liquid being proportioned to the age of the child. When lavage has to be carried out for long periods, the patient can usually be taught to wash out his own stomach. In most cases the best time is before breakfast.

Duodenal washing has been carried out recently in cases of intestinal indigestion. Special tubes have to be employed, and considerable skill exercised in passing them through the pyloric orifice of the stomach.

LAVAGNA, COUNT OF. See FIESCO, or FIESCHI, G. L.

LAVAL, lă'val'. The capital of the Department of Mayenne, France, situated on the river of the same name, 46 miles east of Rennes (Map: France, N., E 4). The ancient town on the left bank of the river is very picturesque; on the opposite side is the modern town. Laval has a sixteenth-century cathedral, but the principal relic is the old château of the dukes of Laval, used as a prison. Adjoining it, a modern château in Renaissance style is used as the courthouse. Laval also has an old linen hall (used for exhibitions), an art museum, a museum of natural history, and an episcopal palace. Educational institutions include a lycée, a nor-

mal school, a seminary, and a library of 32,000 volumes. Laval is noted for its linen industry, which was introduced there in the fourteenth century. It also manufactures cotton goods, paper, leather, flour, dyestuffs, machinery, trimmed lumber, and marble products. Laval is the seat of a bishop. Pop., 1901, 30,356; 1911, 25,540. The town dates from the ninth century. Near here the Vendéans achieved a victory in October, 1793.

LAVAL, C. G. P. DE. See DE LAVAL.

LA VALETTE, lă vâ'lêt', ANTOINE MARIE CHAMANS, COUNT DE (1769-1830). A French statesman and aid-de-camp to Bonaparte. He was librarian at Ste. Geneviève at the outbreak of the Revolution (1789). He sympathized with the more moderate party in attempting to save the lives of the King and Queen, entered the army, and served with Bonaparte in Italy and Egypt. Afterward he served as Ambassador to Saxony, and was post director and Councilor of State under Napoleon I and again in the Hundred Days. When La Valette had been condemned to death by Louis XVIII, his wife contrived his escape in her clothes on the eve of his intended execution, and she herself perished in the prison. After five years' banishment in Bavaria La Valette was permitted to return. His *Mémoires et souvenirs* (new ed., 1905) are an important source for the history of the First Empire.

LA VALETTE, JEAN PARISOT DE. See VALETTE.

LAVALLEY, lă'vâ'lâ', ALEXANDRE THÉODORE (1821-92). A French engineer, born at Bois-Thillard. He studied at the Ecole Polytechnique, became an officer in the engineers, but resigned from the service, and carried out with Borel part of the work on the Suez Canal. He directed the engineering work of the port, proposing and using powerful dredging machines with great success, and in 1876 undertook the construction of the railroad at Pointe des Galets, Réunion. He published *Communications à la société des ingénieurs civils sur les travaux de l'isthme de Suez* (Paris, 1860-69).

LA VALLIÈRE, lă vâ'lyâr', LOUISE FRANÇOISE DE LA BEAUME LE BLANC, DUCHESS DE (1644-1710). A mistress of Louis XIV of France, born in Touraine, of an ancient and noble family. At an early age she lost her father and was brought to court by her mother, who had married a second time. She was not a great beauty and had a slight lameness; but her amiability and winning manners rendered her attractive. She bore the King four children, of whom two died in infancy. In 1674, after her displacement by Madame de Montespan, she entered the convent of the Carmelites in Paris and spent 36 years there in penance and prayer. She is considered the author of a book entitled *Réflexions sur la miséricorde de Dieu* (Paris, 1680), of which a copy, dated 1688, with corrections by Bossuet, was discovered in the Louvre in 1852. A collection of her letters was published in 1767. A necklace with pendants has been named for her; it is usually spelled lavalier.

LAVAL-MONTMORENCY, lă'vâ'l-môn'mô-rân'sé', FRANÇOIS XAVIER DE (1622-1708). A French bishop. He was born at Laval, France, received the tonsure at the age of nine, was made a priest at 23, and six years later was named Missionary Bishop of Cochinchina. He declined the office, however, and in 1653 was ap-

pointed Archdeacon of Evreux. In 1659 he was sent to Canada as Apostolic Vicar, with the title of Bishop of Petra *in partibus*. He established the Seminary of Quebec (1663) under letters patent of Louis XIV and used his immense influence to direct in large measure the policy of the government, which was one of paternalism. He actively opposed the sale of liquors to Indians. In 1674 he became Bishop of Quebec—an office which he held till 1683, when he resigned and devoted himself to the conduct of the affairs of the seminary. His name is perpetuated in the Laval University at Quebec and is regarded with great veneration by the French Canadians.

LAVAL UNIVERSITY (*Université Laval*). A French Catholic institution in Quebec, Canada, founded in 1852, established and maintained by the Quebec Seminary. By a papal bull of 1876 the university secured extended privileges, and the Cardinal Prefect of the Propaganda was made its protector at Rome. Its doctrine and discipline are in the control of a superior council, composed of the archbishops and bishops of the Province of Quebec, under the presidency of the Archbishop of Quebec, who is the apostolic chancellor of the university. By virtue of its royal charter the visitor of the university is always the Catholic Archbishop of Quebec, with the power of veto over all the rules and nominations. The university council consists of the directors of the Quebec Seminary and the three senior professors of each faculty. There are four faculties—theology, law, medicine, and arts—in each of which the bachelor's, master's or licentiate's, and doctor's degrees are conferred. The theological professors are appointed by the visitor, all others by the council. In 1913-14 the university had 474 students, of whom 156 were in theology, 80 in law, 66 in medicine, and 172 in arts. The faculty numbered 70, and the library contained 140,000 volumes. The extension work of the university is carried on through a branch at Montreal, which is practically independent, and by a system of affiliated seminaries throughout the Province of Quebec. Rector, Monseigneur A. E. Josselin.

LAVATER, lä'vā-tēr, JOHANN KASPAR (1741-1801). A Swiss mystic, founder of what is known as the "art of physiognomy." He was born in Zurich, the son of a physician. As a boy, he showed no remarkable aptitudes, though in youth he gave proof of power by coming forward in 1762 with the artist Henri Fuseli to accuse the Landvogt Grebel of oppression and injustice, under which others had groaned without daring to complain. A volume of poems entitled *Schweizerlieder* (1767) early gained for Lavater a great reputation. *Aussichten in die Ewigkeit* (3 vols., 1768-73), his next publication, speedily ran through several editions. The tone of his work is one of exalted religious enthusiasm, mingled with asceticism; for Lavater was a mystic both in theology and philosophy. This gave to his opponents an opportunity to accuse him of all manner of heresy. Possessing the keenest powers of observation and the most delicate discrimination of human traits, Lavater came to believe that the character of men could be discovered in their countenances. He labored to form a system of physiognomy, hoping thus to promote the welfare of mankind, and at last published the work upon which his fame chiefly rests, *Physiognomische Fragmente zur Beför-*

derung der Menschenkenntniss und Menschenliebe (4 vols., 1775-78). Lavater at first hailed the French Revolution with joy, but after the murder of the King he regarded the whole movement with religious abhorrence. At the capture of Zurich by Masséna, while aiding the wounded in the street, Lavater himself received a wound, from the effects of which he died.

LAVATER, LOUIS. The pseudonym of the Alsatian historian Ludwig Adolf Spach (q.v.).

LA VAULX, là vò, HENRY, COUNT DE (1870-). A French aeronaut and writer, born at Bieville. He visited the United States in 1905 and by his lectures on aeronautics aroused an interest which led to the establishment of several aero clubs. The owner of dirigible balloons and aéroplanes and holder of several long-distance records, he was elected to office in various aeronautic societies and was sent on scientific missions by the French government. He published: *Seize mille kilomètres en ballon* (1901); *Voyage en Patagonie* (1901), crowned by the French Academy; *Cent mille lieues dans les airs* (7 vols., 1904-05), *Le tour du monde de deux gosses* (1909), *Le tour du monde en aéroplane* (1910), the last three books in collaboration with A. Galoupin; *Le triomphe de navigation aérienne* (1912).

LAVEDAN, là've-dān', HENRI (1859-). A French novelist, dramatist, journalist, and critic. He began his career as a journalist and story-writer, but soon turned to the drama, in which he did his best work. The work of a moralist and keen observer, his plays show much satirical power. He has depicted the gay life of Parisian society, the nobility as a class, problems of domestic life, and historical episodes. In 1898 he was elected to the Academy. The best known of his tales are *Leur beau physique* (1894); *Leurs sœurs* (1895); *C'est servi* (1904), *Baignoire 9* (1905). His plays, beginning with *Une famille* (1891), include *Le nouveau jeu* and *Catherine* (1892); *Le prince d'Aurec* (1894); *Le vieux marcheur* (1895); *Les deux noblesses* (1897); *Le marquis de Priola* (1902); *Viveurs* and *Varennnes*, with G. Lenôtre (1904), *Le duel* (1905), produced in New York in 1906; *Le bon temps* (1906); *Sire* (1910), seen in New York in 1911, *Servir* (1913).

LAVELEYE, là'v'-là', EMILE DE (1822-92). A Belgian political economist and publicist, born at Bruges. He studied at Ghent and in 1864 was made professor of political economy in the University of Liège. He was a member of the international jury at Paris, 1867, and a corresponding member of the Academy of Moral and Political Sciences of Paris. Laveleye wrote much for the *Revue des Deux Mondes* and other periodicals. His most important works are: *De la propriété et ses formes primitives* (1874); *Le socialisme contemporain* (1881); *Éléments d'économie politique* (1882); *Le gouvernement dans la démocratie* (1891); *La monnaie et le bimétallisme internationale* (1891).

LAVELLE, là-vél', MICHAEL J. (1856-). An American Roman Catholic prelate. Born in New York City, he graduated there from Manhattan College in 1873 and from St. Joseph's Seminary, Troy, N. Y., in 1874, and was ordained to the priesthood in 1879. He became assistant in 1879 and rector in 1886 of St. Patrick's Cathedral, New York City, was appointed Vicar-General of New York in 1902, and in 1903 was made domestic prelate to Pope Pius X with the

title of Monsignor. For seven years he was president of the Catholic Summer School of America.

LAVENDER (ML. *lavandula*, *lavendula*, lavender, from It. *lavanda*, lavender, washing, from It., Lat. *lavare*, to wash; connected with Lat. *luere*, Gk. *louein*, to wash), *Lavandula*. A genus of plants of the family Labiatae, having the stamens and style included within the tube of the corolla, the corolla two-lipped—the upper lip bifid, the lower trifid. The common lavender or narrow-leaved lavender (*Lavandula vera*) grows wild on stony mountains and hills in the south of Europe, and in more northern regions is very generally cultivated in gardens. It has an aromatic fragrance, aromatic bitter taste, and contains a volatile oil, oil of lavender. The whole plant is credited with



LAVENDER.

stimulant properties, but particularly the flower spike, and is used in medicine as a tonic, stomachic, nerve stimulant, etc. Lavender flowers are often put into wardrobes to keep away moths. They are much used in perfumery. Lavender is extensively cultivated for its flowers in France and in some places near London. Broad-leaved lavender (*Lavandula spica*) is also a native of the south of Europe, but is more tender than common lavender. It is also less fragrant, and the oil which it yields is called oil of spike and sometimes foreign oil of lavender. Arabian lavender (*Lavandula stoechas*) yields an inferior oil for varnish. Lavender is grown frequently in gardens in the United States, especially in California, but nowhere as yet on a commercial scale.

LAVER, or SLOKE. See CARRAGEEN.

LAVÉRAN, là'v'-rân', CHARLES LOUIS (1812-79). A French military physician, born at Dunkirk. He studied at Lille, was assistant at the hospital of Algiers and professor at the military hospital at Metz (1841-50), whence he returned to Algeria. At the reorganized Ecole Val de

Grâce he became professor of epidemiology, physician in charge, and director. After acting as sanitary inspector of the Army of the North in the Franco-Prussian War, he was for a time head of the military school at Montpellier, but in 1872 went back to Val de Grâce as chief director. His great work, *Traité des maladies et des épidémies des armées*, published in 1875 by his son (q.v.), is largely supplemented by his contributions to medical journals and to the *Dictionnaire encyclopédique des sciences médicales*.

LAVÉRAN, CHARLES LOUIS ALPHONSE (1845-). A French physician, the discoverer of the plasmodium of malaria. He was born in Paris, the son of Charles Louis Laveran. He entered the School of Military Medicine at Strassburg in 1863, taking his degree in 1867. Six years later he was appointed professor at Val de Grâce. In 1878 he left for Algeria to investigate malarial fevers and remained there until 1883, when he returned to Val de Grâce to occupy the chair of military hygiene and clinical medicine until 1894. He then held the post of director of the Eleventh Corps in the Army Medical Service, retiring in 1897. Subsequently he became physician in chief at the Lille Hospital and a member of the French Academy of Medicine. In 1907 he was awarded the Nobel prize for medicine. He wrote several treatises on malaria, summarized in *Traité des fièvres palustres* (1884), which announced the discovery of the hæmatozoön of malaria, and obtained the Bréant prize. He also published: *Traité des maladies et épidémies des armées* (1875), written by his father; *Eléments de pathologie médicale* (1894), in collaboration with Teissier; the article "Maladies épidémiques" of the *Traité de pathologie générale* of Professor Bouchard; *Traité de hygiène militaire* (1896); *Paludisme et trypanosomiasé* (1905); *Traité du paludisme* (1898); *Trypanosomes et trypanosomiasés*, with F. Mesnil (1904; Eng. trans. by Nabano, 1907). See MALARIA.

LA VERANDRYE. See VERANDRYE, LA.

LAVÉRIÈRE, là'vër'dyâr', CLAUDE HONORÉ (1826-73). A Canadian educator and author. He was born in the Province of Quebec and was educated for the priesthood, to which he was ordained in 1851. He afterward became a professor in the Quebec Seminary and assistant librarian of Laval University. He did much to bring to light and to popularize the achievements of the early heroes of French Canada. Three volumes of the *Jesuit Relations* (1858) were in part published by him, and he edited the *Voyages of Champlain*, with notes and a life of that explorer (1870); also the *Journal des Jésuites* (1871). He also produced a popular *History of Canada* and edited a collection of French-Canadian songs and hymns.

LA VERGNE, là vër'nyâ', M. M. P. DE. See LA FAYETTE, COUNTESS DE.

LAVÉRNA. In Roman mythology, originally a goddess of the underworld, later a goddess of darkness, the protecting goddess of thieves and impostors, who love darkness. The Porta Lavernalis, on the southern slope of the Aventine, near which an altar was erected in her honor, was named for her. She had a grove also on the Via Salaria, which ran northeast from Rome into the Sabine territory. Consult Horace, *Epistles*, i, 16, 60, and the editors on the passage, and Georg Wissowa, *Religion und Kultur der Römer* (2d ed., Munich, 1912).

LAVERY, làv'ér-I, JOHN (1857-). A

Scottish portrait, figure, and landscape painter. He was born in Belfast, Ireland, but was brought up in Scotland and studied at the Glasgow Art School, at Heatherley's, London, and later in Paris under Bouguereau and Fleury. He first attracted attention with his "Game of Tennis" (Munich Pinakothek), exhibited at the Academy in 1886, and two years later was commissioned to paint "The State Visit of Queen Victoria to the Glasgow Exhibition of 1888" (Glasgow Art Gallery). After traveling extensively in northern Africa and on the Continent, where he is perhaps more highly esteemed than in England, he made his headquarters in London. His art, which owes much to Whistler, Manet, and Velazquez, is brilliant, unemotional, elegant in design, and subtly harmonious in color; this, subdued in his earlier works, later increased in richness. His portraits of women, for which he is best known, appeal particularly through their unity of effect and tender piquancy, but, while distinctly personal, are often superficial in characterization. Among the most celebrated of his pictures are: "A Lady in Black" (1893, National Gallery, Berlin), "A Garden in France" (1897, Philadelphia Academy Spring, 1903, Luxembourg), "Lady in Pink" (Venice Gallery); "Mary in Green" (1904, Ottawa Gallery); "Polymnia" (1904, National Gallery, Rome), "The Sisters" (1904); "Miss Elsie as the 'Merry Widow'" (1907, Santiago, Chile); "Eileen" (1909); "Girls in Sunlight" (1910). One of his most successful portraits of men is that of R. Cunningham Graham (1894, Glasgow Art Gallery). A portrait of himself is in the Uffizi, Florence (1911). Lavery also painted admirable landscapes, as "The Bridge at Grès" (1883, Carnegie Institute, Pittsburgh) and many fine studies of Morocco, including "The Market Place" and "A Moorish Harem." Further examples of his versatility are furnished by a decorative panel and lunette in the Banqueting Hall of the Glasgow Municipal Buildings and two historical paintings, "Night after the Battle at Longside" (Brussels Museum) and "Dawn." A number of his pictures were exhibited in New York in 1915. Lavery received various decorations, and gold medals at Brussels, Paris, Vienna, and the Carnegie Institute, Pittsburgh. Consult Christian Brinton, *Modern Artists* (New York, 1908), and W. S. Sparrow, *John Lavery and his Work* (London, 1911).

LAVES, lá'vès, KURT (1866-). An American astronomer. He was born at Lyck, Germany, where he graduated from the Royal Gymnasium of the Humanities in 1886, and he studied at the universities of Königsberg (1886-87) and Berlin (Ph.D., 1891). In 1893 he joined the faculty of the University of Chicago, where he became associate professor of astronomy in 1908. The subjects to which he devoted particular attention were the lunar equation and the solar parallax, effective potential forces, Jacobi's partial differential equation, Maupertius' principle, a graphic method to determine orbits of spectroscopic binaries, and problems of three bodies in spectroscopic systems.

LAVEZARIS, lá'və-thá'rés, or **LABAZARES**, GUIDO DE (1510-80). A Spanish adventurer, born in Bilbao. With New Spain as a starting point, he went on a voyage of conquest to the Spice Islands (1542) and was unwillingly detained there for about six years. In 1558 he explored the Gulf coast of the United States from Vera Cruz to Florida and discovered and

named a bay, Filipina (probably Mobile Bay). This was rechristened Santa Maria by Luna de Arellano the following year, when Lavezaris was his companion. In 1564 Lavezaris was appointed royal treasurer to accompany the expedition of Legazpi for the conquest and conversion of the Philippines. Lavezaris succeeded to the governorship in 1572, upon the death of Legazpi. He fortified Manila to withstand a long siege by Chinese pirates and ultimately drove them and the Dutch corsairs from the surrounding islands. On the arrival of the new Governor-General (1575), Lavezaris yielded the chief position, but remained in Manila as Lieutenant Governor until his death. His accounts of the Florida and Philippine voyages were published by the Madrid government (1578). Consult H. Ternaux-Compans, *Voyages, Relations, et Mémoires*, vol. xx (Paris, 1841); P. J. Hamilton, *Colonial Mobile* (Boston, 1898); Blair and Robertson, *Philippine Islands* (Cleveland, 1903-09).

LAVIGERIE, lá'və'zhre', CHARLES MARTIAL ALLEMAND (1825-92). A French Roman Catholic prelate and missionary. He was born at Bayonne, was educated in the schools of the Petite Séminaire and the Séminaire de Saint Sulpice, Paris, and was appointed professor of ecclesiastical history at the Sorbonne in 1853, domestic prelate to the Pope, French auditor in Rome, Bishop of Nancy, in 1863, and Archbishop of Algiers in 1867. He had previously become an Officer of the Legion of Honor and in 1874 established his famous Central-African mission, founding the orders of White Fathers and White Sisters for work from Algiers southward. In 1881 he was appointed administrator of ecclesiastical affairs in Tunis and in 1882 was made Cardinal. Lavigerie devoted the best energies of his life to the suppression of slave hunting and slave barter; he lectured to great audiences in the various European capitals and finally secured the agreement between the English and German governments to enforce rigidly the anti-slavery clause of the Congo Conference and to call an international congress at Brussels to determine on a plan of international action. In 1890 he created a sensation in France by a speech advocating the acceptance of the Republic by the church, in which it was later shown he expressed the wishes of Pope Leo XIII. He died in Algiers, Nov. 26, 1892. His *Œuvres choisies*, principally relating to missionary and antislavery efforts, were published in two volumes (Paris, 1884).

Bibliography. Félix Klein, *Le Cardinal Lavigerie et ses œuvres d'Afrique* (Tours, 1897); Louis Baunard, *Le Cardinal Lavigerie* (Paris, 1898); Louis d'Annam, *Le grand apôtre de l'Afrique au XIXe siècle; ou, Vie de son Eminence le Cardinal Lavigerie* (ib., 1899); Vicomte de Colleville, *Le Cardinal Lavigerie* (ib., 1905); J. B. Piolet, *Les missions d'Afrique* (ib., 1908); J. Tournier, *Le Cardinal Lavigerie et son action politique, 1863-92* (ib., 1913); id., *Bibliographie du Cardinal Lavigerie* (ib., 1913).

LAVIGNAC, lá'ven'yák', ALBERT (1846-). A French writer on music, born in Paris. He received his musical education in that city and in 1882 became professor of solfeggio at the Conservatory. He was subsequently made professor of harmony and awakened wide interest by championing the cause of musical dictation, for the furtherance of which he wrote *Cours complet théorique et pratique de dictée*

musicale (1882). Among his best-known works are: *La musique et les musiciens* (1895; Eng. trans., 1899), which is a standard on the subject; *Le voyage artistique à Bayreuth* (1897), later expanded and translated into English as *The Music-Dramas of Richard Wagner* (1898); *Les guités du Conservatoire* (1900); *L'Éducation musicale* (1902); *Notions scolaires de musique* (1905). He became the editor in chief of a voluminous *Encyclopédie de la musique*, the first volume of which appeared in 1913.

LA VILLEMARQUÉ, lá vél'mär'ká', THÉODORE CLAUDE HENRI HERSART, VICOMTE DE (1815-95). A French antiquary and Celtic scholar, born at Quimperlé, Brittany. His first important work was a collection of popular Breton songs and melodies, in two volumes, published in 1839, with a French translation and notes, under the title of *Barzas-Breiz* (9th ed., 2 vols., 1892). Three years afterward appeared his "Popular Tales of Brittany," in two volumes, to which was prefixed a dissertation on the story of the Round Table. His next work was a collection of the poems of the Celtic bards of the sixth century with a French translation, and explanatory and critical notes (1850; 2d ed., 1860). This publication made the labors of La Villemarqué widely known. In 1851 he was elected corresponding member of the Academy of Berlin and in 1858 a member of the French Institute. Afterward he published a work entitled the "Celtic Legends" (*La légende celtique*) of Ireland, Cambria, and Brittany, which contains such of the original texts—Irish, Welsh, or Breton—as are rare or unpublished (1859). La Villemarqué is the author or editor of several other works connected with the Celtic literature and languages, among which are a *Breton Grammar* (1849); *Les bardes bretons, poèmes du VI^e siècle* (Paris, 1850; new ed., 1860); a *Breton and French Dictionary* (2 vols., 1847-50); *Les romans de la Table Ronde* (1842; 4th ed., 1861); *Brittany, Ancient and Modern*; *The Great Mystery of Jesus* (1865; 2d ed., 1866), a Breton drama of the Middle Ages.

LAVINIA. In Roman tradition, the daughter of Latinus (q.v.) and wife of Æneas, who named in her honor the newly built town of Lavinium.

LAVINIA, or **CIVITÀ LAVINIA**, ché'-vé-tá lá-vé'nyá. See LANUVIUM.

LAVINIUM. A very ancient town of Latium, about 19 miles southeast of Rome, where the modern village of Pratica stands. Legend states that it was founded by Æneas and named in honor of his wife, Lavinia, daughter of King Latinus. With the growth of population, said the tradition, the town became overstocked, and Ascanius, or Iulus, son of Æneas, led away part of the inhabitants and founded Alba Longa, the traditional mother city of Rome. Lavinium was renowned in very early times for its sanctuary of Venus and for its cult of the tutelary gods of the Latin League, of which it became a sort of religious centre. Like other important Latin towns of the earlier period, it gradually lost its prestige with the growth of Rome. The Emperor Trajan (98-117 A.D.) gave it a new lease of life by joining the colonies of Laurentum and Lavinium, under the name Lauro-Lavinium, and locating there new colonists. It should be noted that the modern Civita Lavinia is on the site of the ancient Lanuvium, not on that of Lavinium.

LAVISSE, lá-vés', ERNEST (1842-). A

French historian, born at Nouvion-en-Thiérache, Aisne. He was educated at a classical school in Paris and at the Superior Normal School, and received a fellowship in history in 1865. He taught for 10 years in the lycées at Nancy, Versailles, and at the Collège of Henry IV; was then appointed master of conferences at the Superior Normal School, and in 1888 became professor of modern history in the Faculty of Letters at Paris. In 1892 he was elected to the French Academy. He is distinguished alike for the clearness and carefulness of his elementary works and for the authoritative character of his researches. His lectures, the most popular at the University of Paris, and his extensive contributions to historical literature, won for him a high place among French historians. In both he strove to foster a better feeling between France and Germany. Among his published works are: *La marche de Brandebourg sous la dynastie ascanienne, étude sur l'une des origines de la monarchie prussienne* (1875); *Leçons préparatoires d'histoire de France* (1876); *Études sur l'histoire de Prusse* (1879), crowned by the Academy; *La première année d'histoire de France* (1883), Sully (1880); *Trois empereurs d'Allemagne* (1888); *Histoire de France et notions d'histoire générale* (1890), with M. Duruy; *Vue générale de l'histoire politique de l'Europe* (1890); *La jeunesse du grand Frédéric* (1891). With Rambaud he edited and contributed largely to the *... générale du IV^eme siècle à nos jours*. In 1900 he became the editor of a monumental *Histoire de France* in nine volumes, completed in 1911. In 1909 appeared the fourth edition of his *Essais sur l'Allemagne impériale*, and in 1912 *Souvenirs, reminiscences* written in a charming vein.

LAVOISIER, lá'vwá'zyá', ANTOINE LAURENT (1743-94). The founder of modern chemistry. He was born in Paris and was educated at the Collège Mazarin. He showed great aptitude for the mathematical and physical sciences, studying mathematics under Abbé Lacaille, botany under Jussieu, and chemistry under Rouelle. He then traveled through France with Guettard, who was at the time engaged in important geological work. As early as 1768 Lavoisier became a member of the Academy of Sciences, and in the following year he obtained a post as farmer-general of the revenue, by which he was enabled to devote most of his time to research work. Between 1772 and the year of his death Lavoisier worked out the principles forming the cornerstone of modern chemistry and during this time held several important positions. In 1776 he was made director of powder works and introduced valuable improvements in the manufacture of gunpowder. In 1778 he was appointed one of the trustees of the Bank of Discount. In 1790, as a member of the Commission of Weights and Measures, he was engaged in preparing the decimal system. In 1791 he was commissary of the treasury and published an interesting paper on the economic condition of France. The farmers-general of the revenue were men of eminent social position and considerable wealth, and in the Reign of Terror their wealth became a source of great danger to them. In 1794 Dupin, one of the members of the Convention, accused them of being enemies of their country; Fouquier-Tinville presented the accusation before the Revolutionary Tribunal, and the 27 farmers-general were condemned to die. In vain had one of Lavoisier's friends endeavored to produce an

impression on the Tribunal by describing his scientific achievements. The answer was, "We need no more scientists in France."

At the very foundation of all chemical thought is the law of the conservation of mass. Lavoisier, although not the first to divine that matter is everlasting, was the first to understand that that important truth must be established inductively by the use of the balance. By a series of quantitative experiments Lavoisier proved that, whatever the change in kind, the total amount remains the same; and as all relations of quantity are mathematical relations, Lavoisier saw that every chemical change could be expressed by an equation showing that the sum of the masses of the reacting substances is equal to the sum of the masses of the resulting products. When iron, mercury, tin, and other metals were exposed to the action of the air, their weight increased. The resulting earths contained, besides the matter of the metals, other matter and could naturally be split up again into their constituents; they were therefore complex, not simple substances. The quantitative method of Lavoisier thus threw light on the nature of various substances and led to a clear definition of the idea of chemical elements. Lavoisier also advanced a general theory of the formation of chemical compounds. According to this theory all compounds have a binary constitution. A binary compound of the first order is one made up of two elements. A binary compound of the second order is formed by the union of two binary compounds of the first order. The acids formed by the union of sulphur, nitrogen, phosphorus, and similar substances with oxygen are binary compounds of the first order. Acids are neutralized by bases with formation of salts; therefore salts are binary compounds of the second order. In subsequent times the binary theory proved inadequate and had to be abandoned. It had not lived, however, without giving birth to a series of important results. Since bases were classed by it as compounds of oxygen with metals, chemists were led to search for methods of isolating the latter by decomposing the bases. Thus came the discovery of the alkali and the alkaline earth metals by Davy and the isolation of aluminium by Wöhler, the importance of which for both science and the industries is inestimable. Another important work, in the perfection of which Lavoisier took an active part, must be mentioned here. Little progress could be made in chemical thought without the aid of a system of names which might constantly remind of the composition and properties of compounds. In conjunction with Berthollet, Fourcroy, and Guyton de Morveau, at the instance of the last named, Lavoisier devised a system of rational nomenclature, which is in its main features still used in the chemistry of to-day.

All of his ideas were based on observations which had already been made by others. It is a sad but well-established fact that he often published such observations as his own. But the shadow of his petty scientific plagiarism dwindles into nothing in the light of the brilliant achievements which were indisputably his.

Lavoisier's works include: *Sur la combustion en général* (1777); *Réflexions sur le phlogistique* (1777); *Considérations sur la nature des acides* (1778); *Mémoire sur l'affinité du principe oxygène avec les différentes substances auxquelles il est susceptible de s'unir* (1782); *Méthode de nomenclature chimique* (jointly

with Guyton de Morveau, Berthollet, and Fourcroy, 1787); *Mémoire sur la respiration des animaux* (jointly with Séguin, 1789); *Traité élémentaire de chimie* (2 vols., 1789), giving a list of 33 elementary substances, including caloric and light; *Opuscules physiques et chimiques* (1774 and 1801). In 1789 he founded the *Annales de chimie*. Two volumes of his *Mémoires de chimie* were published posthumously in 1805. His complete works have been published by the French government under the title *Ouvrages de Lavoisier publiés par les soins de Son Excellence, le Ministre de l'Instruction Publique* (6 vols., 1864-93).

Bibliography. Numerous accounts of Lavoisier's life and work have been written. An admirable sketch of his achievements is given in C. A. Wurtz, *Dictionnaire de chimie pure et appliquée*, Introduction (Paris, 1868); consult also: Edouard Grimaux, *Lavoisier d'après sa correspondance, ses manuscrits, ses papiers de famille et d'autres documents inédits* (ib., 1888); P. E. M. Berthelot, *La révolution chimiques: Lavoisier, suivi de notices et extraits des registres inédits de laboratoire Lavoisier* (ib., 1892); Ernst Schultze, *Lavoisier, der Begründer der Chemie* (Hamburg, 1894); Max Speter, *Lavoisier und seine Vorläufer: eine historisch-kritische Studie* (Berlin, 1910); T. E. Thorpe, *Essays in Historical Chemistry* (New York, 1911).

LA VOISIN, là vwa'zân' (?-1680). A French sorceress. Her real name was Catharine Monvoisin. She played a prominent part in the famous *Affaire des Poisons*, during the reign of Louis XIV. She practiced fortune telling, sorcery, midwifery, and medicine, and had as clients many women prominent in court circles. She is said to have attempted to poison Louise de la Vallière, the King's mistress, at the instigation of the Countess of Soissons. Poisoning had become so common that a royal commission was appointed to bring the professional poisoners to justice. The commission met in April, 1679. La Voisin was one of the first criminals; after being tortured, she was executed in February, 1680. A great number of her accomplices and of other poisoners were similarly dealt with, although the revelations made to the commission implicated persons so close to the King that many of the guilty were able to escape. Consult: François Ravaissou, *Archives de la Bastille*, vols. iv-vii (Paris, 1870-74); F. Funck-Brentano, *Le drame des poisons* (ib., 1900); A. Masson, *La sorcellerie et la science des poisons au XVII^e siècle* (ib., 1903).

LAVROV, lāv-rōf', PETER LAVROVITCH (1823-1900). A Russian revolutionist, scientist, and philosopher. He was born of well-to-do parents in the Province of Pskov. At 14, after a good home education, he entered a military academy, becoming an army officer on graduation in 1842. Then for 22 years he was instructor in mathematics, of which he was passionately fond. He was almost equally well versed, however, in natural science, history, logic, psychology, and philosophy. In 1862 he entered the revolutionary movement by joining the Land and Liberty party. Four years later he was arrested for his prorevolutionist sympathies and in 1868 exiled to the Urals, whence, however, he soon escaped and went abroad, living mostly in Paris. In 1871 he visited Belgium and England in behalf of the Paris Commune, and from 1873 to 1877 edited his Socialist review, *Forward*, in which

Russian political events received special attention. While abroad he kept actively in touch with the Russian movement, contributing anonymously to the progressive periodicals and founding several political organizations bent upon Russian emancipation. Lavrov's very numerous articles and pamphlets, the product of more than 40 years of prolific writing, cannot be mentioned here. Among his longer works are: *The Hegelian Philosophy* (1858-59), an admirable exposition; *An Attempt at a History of Modern Thought* (2 vols., 1859), an important though uncompleted contribution to evolutionary philosophy; *An Outline of the Physico-Mathematical Sciences* (1866); *Studies in the Problems of Practical Philosophy* (1860), a work of extraordinary penetration; and *Historical Letters* (1879), written while the author was in exile and published under the pseudonym of Mirtov. It is this last that has particularly endeared Lavrov to Russian readers for its strong personal note and its good practical suggestions. These letters have greatly influenced the course of revolutionary activity in Russia, for their author was a firm believer in reform from within, not from without; "Educate the people" was his great principle of propaganda. Consult K. Tarassoff, "Peter Lawroff," in *Die Neue Zeit*, vol. xviii (1st series, Stuttgart, 1899-1900).

LAW (AS. *lagu*, from *liogan*, Goth., OHG *lgan*, Ger. *legen*, to lie, connected with OChurch Slav. *lezhati*, to lie, Lat. *lectus*, couch, Gk. *λόχος*, *lochos*, lair). In the widest sense, a constant sequence of events related as cause and effect. In this sense a law may be defined as the statement of such a causal relation. In a more restricted sense, as applied to the life of man in society, law is the body of observances, conventions, and rules which define the social organization and determine the relations of its members to such organization and to one another. In the narrowest sense, of "positive law," it is the aggregate of the rules of human conduct which the state, through its political organization, regularly enforces by means of appropriate agencies directed by it.

The end of law in society is the regulation of the life of the individual in accordance with the will of the community—in other words, to secure conformity to the standards of social life which the community deems essential to its well-being. In most instances obedience to this law is secured through social pressure, i.e., by the threat of social ridicule, or contempt, or scorn, or ostracism. These methods of compulsion may be described as moral or social sanctions, and the law so enforced as moral or social law. Of this class are the so-called laws of honor, of etiquette, of morality, and the like. But there is a point where the moral law breaks down, where the social sanction fails to secure the necessary or the desired conformity; and at this point the state steps in and supplements the milder social sanction by the sanction of physical force.

Many rules which govern the social life—the majority of the rules which govern the intercourse of individuals—are at the same time rules of morals and rules of law; but law and morals have each a distinct field. There are social rules which cannot be enforced by any but moral penalties, and many more which it would be unwise to attempt to enforce by the ruder processes of the positive law; and there

are many cases in which the social interest requires that a rule shall be established and enforced, but in which it is ethically immaterial what the rule shall be.

Early Custom and Law. The beginnings of law are found in social habit or custom. Custom is simply observance of precedents. Precedents are made by acts and forbearances. Whenever a power is exercised or a state of things is maintained by the community itself, or by individuals with the acquiescence of the community, a precedent is established. In early custom, religion, morals, and law are blended or imperfectly differentiated. Some of the rules of early custom, however, deal with matters which are regarded in modern times as legal, and of these quasi legal rules some are enforced by physical coercion, the transgressor being lynched or sacrificed to the gods or expelled from the community (outlawry). Other violations of custom which are not felt to be injurious to the whole community are punished by the injured kinship group or by the injured individual with the aid of his kinsmen (self-help, vengeance, feud). So long as such acts of redress or vengeance, although regarded as rightful, may lead to further retaliation, the sanction behind the rules of custom is still purely moral, but when the community begins to protect the persons who in its opinion have obtained due redress or taken rightful vengeance, these persons become in reality agents of the community, and the sanction behind the rules which they enforce may fairly be called legal. Self-help, thus ordered, meets the needs of early society in all cases in which the right to be enforced is clear, and its violation apparent, but it does not furnish any mode of settling controversies. This open place is filled by oaths, by ordeals, by arbitrations, and at last by authoritative judgments. (For the beginnings of jurisdiction, see COURT.) When courts are once established, custom gains not only an authoritative interpretation, but a development which, however slow, is far more rapid than was previously possible. Within the field over which the courts have jurisdiction, the growth of customary law is henceforth accomplished by decisions; its rules are found in the tradition or in the recollection or in the written record of judicial precedents. Popular custom is thus supplanted by judicial custom. In legal theory, however, precedents or decisions are not law, but only evidences of the law; and even when they are written, the law which is found in them is said to be "unwritten." This is still the theory of the courts as regards English common law, although it is well recognized that the common law is judge-made law.

At what point of development early custom shall be regarded as law is substantially a dispute over words. The decision depends upon the definition of law. The Austinian definition of a law as a command emanating from a definite sovereign would include few rules of early custom; but those who find the essential element of law in the sanction will recognize in the most primitive custom a core of law.

Equity. With the establishment of judicial and legislative authorities, the factors that produce law in modern times are already operative. There is, however, an intermediate stage of development, noticeable both in Roman and in English legal history, which is known as equity. Neither the Roman prætors nor the English

chancellors in developing new law laid down hard and fast rules, like legislators, they found law in the decision of single cases, like judges; but they did not regard themselves as bound by the precedents by which the administration of justice had previously been controlled. The new rules that were applied were not at first regarded as law, but rather as arbitrary assertions of governmental power. When, however, as happened both at Rome and in England, equity, following its own precedents, developed a new body of judicial custom, it was recognized that this custom was law. In England and in the United States equity is recognized as judge-made law, and it is often included in the term "common law." See *EQUITY*.

Legislation. In an advanced stage of social progress legislation tends to become an increasingly important agency of legal development. A large part of the Roman Imperial law, however, even in its latest development, was still judge-made law or case law, and in modern times countries not only does much rest upon judicial precedent (common law), but its development is still in the hands of the judiciary. The attempt in modern European states to put all the law into legislative or statutory form seems to be due to exceptional circumstances (see *CIVIL LAW, CODE*); and even in modern European law, although it is commonly denied that decisions make law, the persistent judicial practice by which open places in the written law are filled and new rules found to govern cases which the legislator could not, or at least did not, foresee, is practically treated as law.

Public Law. Not only the relations of individuals and of private associations to each other, but also the organization of the state and of government, and the relations of the different branches of government to each other, are governed by law. This part of the law—constitutional law—is usually, until a comparatively late stage of political development, mainly customary. Acts and forbearances; the exercise of powers to which the community submits or limitations imposed upon power to which the government submits, contests between different branches of the government which end in a one-sided triumph or in reciprocal concessions—these are the precedents which make constitutional custom. In these matters the courts of justice have in most countries no jurisdiction; even in the United States they do not interfere in questions which they regard as political. At the present time nearly all civilized nations have written constitutions; but the development of these written constitutions is still carried on, as in former times, by the establishment of new customary law.

The methods in which governmental power may be exercised, the rights and duties of governmental officers, the relations between government and private persons—these matters are regulated by administrative law. This branch of the law, originally developed by the constant practice or custom of the government, becomes at a comparatively early period a subject of legislation, and in modern times controversies between the administration and private persons are regularly within the jurisdiction of the ordinary courts or of special administrative courts. Administrative legislation is therefore supplemented by judicial custom, i.e., by the customary interpretation of the courts. The

customary practice of administrative agencies, however, has not ceased to be a source of administrative law. See *PUBLIC LAW*.

International Law. Even in its most modern developments international law is almost wholly customary. The precedents on which it rests are the acts and forbearances of independent governments in their relations with one another. It resembles national custom in a very early stage of development; for behind many of its rules there is only a moral sanction, viz., the public opinion of the civilized world. It is true that international law is now generally recognized as a part of the law of each state, and that its rules are enforced by each state against individuals within its jurisdiction; but against an offending state the ultimate remedy is still self-help and international feud, i.e., war, and it is not yet usual for neutral states to give more than moral support to the state that is waging a rightful war. The jurists who refuse to recognize early national custom as law are therefore obliged to deny that international custom is law in the strict sense of the word. Those, however, who find the essential characteristic of law in its sanction point out that rules of international law may be, and sometimes are, enforced by the concerted action of the powers (joint intervention); and that any state which should persistently violate the rules of international law would assuredly be excluded from its benefits, i.e., it would be outlawed. There is also, in international relations, the beginning of legislative action in the form of general compacts (declarations of congresses); and there is the growing practice of judicial decision in the growing practice of arbitration, and in the recent establishment of a permanent tribunal at The Hague to which international disputes may be referred. See *INTERNATIONAL LAW; WAR, WAR IN EUROPE*.

Abrogation of Law. That legislative rules are abrogated by repeal and by contrary legislation; that customary law is put out of force by contrary legislation, by change of custom, and by general nonobservance (desuetude)—these facts are universally admitted. That legislation may lose its force and become "a dead letter," by the development of contrary custom or by desuetude, was affirmed by the Romans, but is generally denied by modern jurists. The history of law, however, is full of examples of the disappearance of written law in consequence of persistent nonobservance; and even in modern times it is not difficult to discover statutes that have never been repealed or superseded and are yet never enforced. When the administrative branch of law is independent of the legislative, it can be enforced only on the initiative of the administration may easily become dead letters by persistent administrative inaction; and this is particularly likely to happen when the law is not supported by public opinion.

Application of Law. Early law is tribal, i.e., the individual is subject to its authority and entitled to its benefits because of his membership in a tribe. With the formation of wider political associations law becomes national. Under either system the stranger or foreigner is out of the law, unless its protection be extended to him through a member of the tribe or nation or by virtue of a treaty.

Early law is also religious; it applies only to the members of a particular cult. Where many tribes have a common religion, the re-

ligious law may give a certain protection, within each tribe, to strangers of the same cult. Differences of religion are not found in early times among the members of a tribe; but with the formation of wider political unions different cults may be brought under a common sovereignty, and different rules may be applied to the adherents of the various cults. This is the case to-day in British India. In some of the European states, as late as the nineteenth century, Jews were allowed to live by their own law as far as their family relations were concerned; and in Austria at the present time divorce is refused to Catholics, although it is granted to non-Catholics.

The law of the modern state (which is sometimes, but not very appropriately, termed "municipal" law) is strictly national only as regards political rights and duties, which are confined to citizens or subjects (nationals). In all other respects it is territorial; it governs all persons within the jurisdiction of the state, whether they are nationals or aliens. A few private rights are withheld in some countries from aliens, but in general the alien enjoys the same private rights as the national. An exception to the rule that law is territorial is found in the institution of extritoriality (q.v.). In many cases, finally, the territorial law itself not only permits but requires the application of foreign law by its own courts. See CONFLICT OF LAWS.

Classification of Law. All law may be divided into two classes—substantive law and adjective or remedial law. Substantive law defines the normal relations of social life; adjective or remedial law defines and deals with abnormal conditions, with violations of the legal order. Substantive law is divided and subdivided according to the character of the relations with which it has to do. Public law is concerned with the state and with government and with relations to which the state is a party; private law, with private persons and the relations between them. Public law is subdivided, as has already been noted, into international, constitutional, and administrative law. Private law classifies persons (natural and artificial or juristic) according to their legal capacity, and it deals with things as the objects of private right. The principal groups of private relations are property, family, and succession. In the field of property law we distinguish the law of things, the law of debts or obligations (contracts and quasi contracts), and the law of monopolies (copyrights, patents, etc.). Family law includes the relations of husband and wife, parent and child, guardian and ward. (The law of master and servant once belonged in the law of the household; with changed social relations it has passed into the law of contractual obligations.) The law of succession has to do with what may be called a normal disturbance of property relations; it provides for the continuance and readjustment of the property relations to which a deceased person was a party. When this readjustment is effected in accordance with the will of the decedent, we speak of testamentary succession; when it is effected by the law in the absence of any validly expressed will of his, we speak of intestate succession; in so far as it is effected by the law in spite of his will, we speak of necessary succession (law of statutory shares). In the civil law the distinction between immovables and movables is confined to the law of things. In the English law the dis-

tinction between real and personal property runs through the law of family (as far as property relations are concerned) and the law of succession and divides each into distinct parts or branches.

Adjective or remedial law, which deals with abnormal conditions, provides for the reestablishment of the normal order, when this is possible; for the indemnification of the persons who have suffered injury; and for the punishment, in person or in purse, of the individuals by whose fault the normal order has been disturbed. Remedial law includes not merely the processes of punishment and redress—administrative procedure, criminal and civil procedure—but also the body of rules which define and classify offenses and provide penalties. It thus includes the law of crimes and the law of torts. (See TORT.) Some writers treat the law of crimes and that of torts as substantive law, placing the former in public, the latter in private law; but these branches of the law do not deal with normal relations, nor does criminal law deal merely with violations of the political order; it provides sanctions which extend over every part of the private law. International law has its remedial as well as its substantive side; it consists of the law of peace and the law of war.

While the distinction between substantive and remedial law is both logical and convenient, it is formal rather than essential. Substantive and remedial law attain the same end in different ways. Social relations are ordered by fixing the limits of permissible action; and these may be fixed as well as by stating what no one may do and by punishing the doer as by stating what one may do and protecting the doer. Historically the former method is the older; rights are felt before they are formulated, and they are gradually defined by the successive repulse of different invasions. Even in modern law there are rights that are recognized in remedial law, but have not yet obtained substantive expression. For example, the individual has a right over his own person which is analogous to (although by no means identical with) ownership of a thing; and this right, although recognized in the prohibition and punishment of homicide, assault, illegal imprisonment, etc., is nowhere defined in substantive law.

Grades of Law. In every state we find legal rules of greater or more general authority and legal rules of inferior or more restricted authority. Where law-making power is delegated to (or has never been wholly taken from) the executive, it is customary to speak of the rules laid down by the executive as orders, regulations, or rules. Municipalities have also a restricted power of legislation; and the acts of their legislative bodies are commonly termed ordinances. Where a limited power of making rules is granted to a private association, we call its rules by-laws. Within their respective fields, executive orders, ordinances, and by-laws, although not commonly termed laws, are as truly laws as the acts of a national or state legislature.

The number of classes or grades of law is increased in federal states by the coexistence of law-making power in the nation and in its component parts. If in considering the different grades of law which exist in the United States we include unwritten law, we obtain the following series:

I. FEDERAL LAW. A. Constitutional. 1. The

Constitution of the United States, and the amendments thereto. 2. The custom of the Constitution, as settled by the acts and forbearances of the Executive and of Congress. 3. The interpretation of the Constitution by the Federal courts. B. *Ordinary*. 1. Acts of Congress. 2. Treaties with foreign states. 3. Executive orders and regulations. 4. Interpretation of acts of Congress, treaties, and executive regulations by the Federal courts.

II. STATE LAW. A. *Constitutional*. 1. The State constitutions and the amendments thereto. 2. The interpretation of the State constitutions by the State courts. B. *Ordinary*. 1. Acts of the State legislatures. 2. Decisions of the Federal courts in matters not governed by Federal law. In cases not governed by Federal law, the Federal courts nominally apply State law; but in the absence of written law they interpret the common law as they see fit: so that, as far as their jurisdiction extends, their decisions have developed a uniform common law for all the States. 3. Decisions of the State courts, construing the acts of the Legislature and interpreting (i.e., developing) the common law. 4. Executive orders and regulations. 5. Municipal ordinances. 6. By-laws of corporations and other associations.

The development of a Federal custom of the Constitution has been necessitated by the difficulty of amending the written Constitution. The absence of any corresponding custom in the States is explained by the ease with which the State constitutions are amended. The interpretation and development of the common law by the Federal courts may in one sense be termed Federal law, but this law is superseded by acts of the State legislatures.

For bibliography, consult the authorities referred to under JURISPRUDENCE; CANON LAW; CIVIL LAW.

LAW. A term of science and philosophy, there used in a metaphorical sense. The primary meaning of the word "law" is written enactment or rule of action laid down by authority. Such law, when enforced by authority, secures a certain uniformity of action. The observed uniformity of action of physical objects thus presents a striking resemblance to the conduct of law-controlled human beings. This resemblance was perhaps the ground for the belief, which appeared in the earliest-known times, that the course of nature is prescribed by enactment of conscious beings. Such a view comes to fullest expression in later Semitic literature. "He gave to the sea his decree, that the waters should not pass his commandment." "Hitherto shalt thou come, but no farther: and here shall thy proud waves be stayed." Against this view protests have been raised for many centuries, but it is only within quite recent times that a less anthropomorphic and more scientific view of the uniformity of natural processes has gained wide currency. According to this view, a "law of nature" is not an enactment expressing the will of some conscious being and obeyed by natural objects, but regularity and uniformity of connection among events; it is thus another way of expressing the fact that all events have causes (see CAUSALITY); and causes of events are not unaccountable entities in some way producing effects by some sort of creative magic, but nothing more nor less than the invariably uniform antecedents of those events. Ever since Hume's trenchant criticism of such words as "force" and

"power," it has come more and more to be seen that nothing is explained by referring effects to the power of causes to produce effects. To attribute the order of nature to the power of some great being who can lay down the law to nature is to explain a fact by a mystery. Science gains nothing, therefore, by ascribing all the uniformities of nature to the determining decree of a supernatural being. The power of such a decree to produce an effect is no more self-explanatory than any causal efficiency of any physical object.

Laws of nature, whether physical, psychical, or psychophysical, are of different orders or grades. Some observed uniformities are particular instances of more extensive uniformities obtaining in many *prima facie* diverse phenomena. For instance, the divergence of the moon's orbit from a straight line was successfully correlated by Sir Isaac Newton with the phenomena of falling bodies nearer the earth's surface. And inasmuch as not only the motion of the moon accords with this law, but also the motions of all the planets and of such comets as have been carefully studied, all these uniformities are correlated in the so-called law of gravitation, which is by hypothesis conceived as obtaining among all physical objects within the universe. In this law of gravitation we have perhaps the best instance of what is called a *scientific* law, i.e., a law which can be stated with accuracy, and to the universality and unconditionality of which all available evidence points with all the assurance of valid logical induction (q.v.).

But not all discovered laws have this logical conclusiveness. Many of them are merely rough generalizations. The exact conditions under which a phenomenon occurs may not yet have been ascertained, and still we may know that under certain general circumstances, not all of which are sufficiently defined, that phenomenon does actually and frequently occur. Take, e.g., the facts of heredity. If there have been in several successive generations many criminals in a certain line of descent, other criminals will probably appear when the present representatives of that line begin to reproduce. But we are not in a position to state the exact conditions under which this further criminality will be sure to appear. Some of the children may escape the taint altogether; some may have tendencies towards criminality, but not too strong to be overcome by proper social influences; while still others are practically incorrigible. Here, then, we have an instance of a more general law of heredity, which may be stated in the proposition that psychical and physical characteristics of children are more or less conditioned by the psychical and physical characteristics of their parents and more remote progenitors. Observe the "more or less" in the statement. There is no such qualification in the law of gravitation. Hence, while the latter is a law in the strictest scientific sense of the term, the law of heredity is a law only in a very loose sense. Such laws are called *empirical* laws. Experience suggests the existence of a causal connection, but science has not yet succeeded in isolating and defining the relation. Empirical laws are the raw material from which scientific laws are elaborated by exact observation, by experiment, and by more guarded generalizations, and especially by correlation with other laws with which they may be related as particular to particular under a common universal.

J. S. Mill's account of empirical laws differs somewhat from that just given, but it is really the starting point of more recent investigations into the differences between scientific and empirical laws. On this account it is worth while to quote it: "Scientific inquirers give the name of 'empirical laws' to those uniformities which observation or experiment has shown to exist, but on which they hesitate to rely in cases varying much from those actually observed, for want of seeing any reason *why* such a law should exist." Consult J. S. Mill, *System of Logic*, book iii (8th ed., New York, 1900), also the other works on inductive logic referred to under LOGIC and INDUCTION.

LAW, ADMINISTRATIVE. See ADMINISTRATIVE LAW.

LAW, ADMIRALTY. See ADMIRALTY LAW.

LAW, AERIAL. See NAVIGATION, AERIAL, LAW OF.

LAW, ANDREW BONAR (1858–). A British statesman, parliamentary leader, and iron manufacturer, born in New Brunswick, Canada, Sept. 16, 1858. He was educated at the Gilbert Field School of Hamilton, Ontario, and at the High School of Glasgow, Scotland, whither his parents had removed in 1870. Although his immediate family was poor, he had wealthy and influential relatives—at 16 he was given employment by his uncle, head of the iron-works of William Kidston and Sons. He learned the business thoroughly and rose to positions of responsibility in and outside the firm. As chairman of the Glasgow Iron Trade Association, he showed marked ability, and he served also as justice of the peace for Dunbartonbury. In 1888 he became a partner in the firm of William Jacks & Co., one of the largest iron manufacturing and exporting houses in Glasgow. His business experience and financial investigations gave him an intimate knowledge both of British and of international fiscal conditions and were of much use to him in his later political career. Having amassed a considerable private fortune, he retired from business and entered politics. His belief in tariff reform in the direction of protection for domestic interests determined his alignment with the Unionist party. He was elected a member of the House of Commons in 1900 from Glasgow, but in the general election of January, 1906, was defeated. In May of that year, however, he was returned from Dulwich. He was unsuccessful in contesting for a seat at Manchester in 1910, but was elected from Bootle, Lancashire, the next year. From the first, Law attracted considerable attention as a practical and well-informed member, and his maiden speech, largely respecting fiscal matters, won the praise of Sir William Harcourt. In 1902 he was given office as Parliamentary Secretary of the Board of Trade and was continued in this capacity throughout the Balfour ministry until 1906. His efficiency as a financial administrator and his ability as a public speaker brought him frequently before the House and the country for favorable attention. His attacks upon the land-tax provisions of the revolutionary Lloyd-George budget of 1909 were regarded as the ablest exposition of the ideas and attitude of the Unionist party. In 1911 Arthur J. Balfour decided to retire from the leadership of the Opposition. In filling the place made vacant through the resignation of this great parliamentarian and philosopher,

the Unionists experienced considerable difficulty. One faction favored J. Austen Chamberlain and another Walter H. Long. It was feared, however, that the selection of either of these popular but factional leaders would bring dissension and friction within the party. As a compromise, Law was elected. Without previous experience as a member of the cabinet and with little or no personal following in the country, Law's election occasioned much surprise. Although a vigorous and pleasing speaker, his oratory was of an unimaginative and sober character, not likely to evoke enthusiasm in the people. In some of his important *parliamentary* utterances, such as that at Albert Hall in 1912, he was indiscreet and was afterward forced to qualify and even retract some of his remarks. But in many of the parliamentary struggles, such as those concerning Irish Home Rule and the Parliament Bill, he had the assistance of Balfour, and although not conspicuously successful as a leader, he was by no means a failure; many regarded him as an able and sound statesman. Glasgow University gave him the degree of LL.D.

LAW, CANON. See CANON LAW.

LAW, CRIMINAL. See CRIMINAL LAW.

LAW, CUSTOMARY. See CUSTOMARY LAW.

LAW, EDMUND (1703–87). An English prelate and metaphysician, born at Cartmel, Lancashire, and educated at St. John's, Cambridge. He was for nine years (1737–46) rector of Grey-stoke, Cumberland, became Archdeacon of Carlisle in 1743 and master of Peterhouse in 1754, and in 1768 was elected Bishop of Carlisle. Among his works, which are marked by painstaking investigation and freedom from dogma, are: *An Enquiry into the Ideas of Space and Time* (1734) and *Considerations on the Theory of Religion* (1745); and later with a biographical sketch by Paley).

LAW, EDWARD. See ELLENBOROUGH, EDWARD LAW, first BARON and first EARL OF.

LAW, FEUDAL. See FEUDALISM.

LAW, J. A. B. See LAURISTON, J. A. B. L.

LAW, JOHN (1671–1729). A celebrated financier and speculator, born at Edinburgh, April 21, 1671. His father was a goldsmith and banker and proprietor of the large estate of Lauriston, near Edinburgh. Law early showed a most remarkable talent for mathematics, and after the death of his father he removed to London, where he was soon prominent both in financial and social circles; but his life was a dissipated one, and in 1695 he was compelled to flee from England in consequence of a duel in which he killed his adversary. After visiting France and Italy he went to Amsterdam and spent his time in studying the credit operations of the bank, where he was employed for a short time. About the year 1700 he returned to Edinburgh, a zealous advocate of a paper currency; but his proposals to the Scottish Parliament on this subject met with an unfavorable reception. He visited different parts of the Continent, where he won large sums by gambling, but sought in vain to win the favor of governments to his banking schemes, which were outlined in a pamphlet advocating a state bank with paper notes. At last in 1715 he settled in Paris, and in company with his brother William set up in 1716 a private bank, which was chartered by the government, and which was soon successful and prosperous to such an extraordinary degree that in 1718 the Duke of Orléans, the Regent, was persuaded to adopt Law's plan of a national

bank. The new institution issued prodigious quantities of bank notes, which at first enjoyed perfect credit, while the ordinary national bonds remained, as they had long been, at a price far below their nominal value. In 1717 Law originated his famous Mississippi Scheme (q.v.) for the purpose of raising money to meet the exigencies of the State. The Compagnie d'Occident was established, with liberty to exploit the region about the Mississippi. It soon absorbed the French East India Company and other trading companies, being transformed into the Compagnie des Indes. The public were invited to invest in the shares of this company, and an extraordinary speculative mania resulted, which drove up the value of the shares to an almost fabulous height. For a time it seemed as if the Mississippi Scheme would more than fulfill its promises, and the company, which undertook the payment of the debts of the government, was charged with the receivership of the taxes. In the meanwhile the country was flooded with paper money, and in 1720 a general financial collapse ensued. Coined money rose in price enormously, financial confusion was general, and Law, who had been made Councilor of State and Comptroller of Finances just before the crash came, thought it prudent to quit France. He proceeded first to Brussels and then to England, where he remained for several years, but finally settled in Venice, where he managed to maintain himself by gambling, and died there, March 21, 1729. Law appears to have remained a firm believer in his theories regarding public credit and currency, which were influenced by the writings of William Patterson (q.v.). Their main fallacy was that he considered money not the effect but the cause of wealth and recommended accordingly an increase of money through paper currency. As a strong believer in the omnipotence of government, he advocated the establishment of one big monopoly combining foreign trade and internal finance under the management of the state instead of through individual enterprise. He developed this system especially in a pamphlet, *Money and Trade Considered*. A complete edition of his works, translated into French, was published at Paris in 1790 and reprinted in 1843. They have since been inserted in Guillauman's collection of the writings of the chief economists and financiers of the eighteenth century.

Bibliography. J. P. Wood, *Memories of the Life of John Law* (Edinburgh, 1824); Alphonse Jobez, *Une préface au socialisme; ou, Le système de Law et la chasse aux capitalistes* (Paris, 1848); J. Heymann, *Law und sein System* (Munich, 1853); P. E. Levasseur, *Recherches historiques sur le système de Law* (Paris, 1854); André Cochut, *The Financier Law: His Scheme and Times* (ib., 1856); Charles Mackay, *Memories of Extraordinary Popular Delusions* (London, 1856); J. L. A. Thiers, *Law et son système des finances* (Paris, 1858; Eng. trans., New York, 1859); S. Alexi, *John Law und sein System* (Berlin, 1885); A. M. Davis, *Historical Study of Law's System* (Boston, 1887); J. B. Perkins, *France under the Regency* (New York, 1892); Henri Gravier, *La colonisation de la Louisiane à l'époque de Law* (Paris, 1904), containing a bibliography; A. W. Wiston-Glynn, *The Financier Law: His Scheme and Times* (London, 1907).

LAW, JOHN (1796-1873). An American jurist, born in New London, Conn. He was de-

scended from a line of lawyers including Jonathan Law (1674-1750), Chief Justice of the Connecticut Supreme Court and Governor. He graduated at Yale in 1814, was admitted to practice in 1817, and soon afterward emigrated to Indiana and made his home at Vincennes. He was successively prosecuting attorney, member of the State Legislature (1823), again district attorney, a judge for eight terms, and in 1838-42 was land-office receiver. In 1851 he moved to Evansville and was one of the founders of the town of Lamasco. He was judge of the Court of Land Claims in 1855-57 and served in the House of Representatives from 1861 to 1865. His address on the *Colonial History of Vincennes* was published in 1839 and in 1858. He was a president of the Indiana State Historical Society.

LAW, MARTIAL. See MARTIAL LAW.

LAW, MERCANTILE. See MERCANTILE LAW.

LAW, MILITARY. See MILITARY LAW.

LAW, MUNICIPAL. See MUNICIPAL LAW.

LAW, NORMAN. See NORMAN LAW.

LAW, PSYCHOLOGY OF. There are two views regarding the psychological origin of law. The one is that law developed from a religious sentiment, viz., from the desire or obligation which was felt by society to fulfill the wishes or commands of the dead. The second view is that, in addition to this religious sentiment, the already existing customs of the social group must be taken into account. The two views are not necessarily antagonistic; they rather regard two different levels or stages in the development of law. The second view, which regards the lower stage, may be stated in brief as follows: Customs are social habits, which take shape before society becomes aware of them. Realization of a custom comes about either through its unwitting infringement or by comparison with the customs of other social groups. In such an event the origin of the custom becomes of moment; and primitive man, naturally enough, refers it to the practice of his ancestors. Here, then, enters the religious motive: the custom must be conformed with out of respect to (or in fear of) the ancestral ghosts. Now, law differs from custom in that it enforces, by definite penalties inflicted for nonobservance, the duty which it enjoins. When, therefore, the breach of custom incurs the wrath of the ancestral ghosts, we have the primary form of penalty, and the custom becomes a law. It is only at a later stage that the procedure itself, as well as the penalty, is derived immediately from the religious motive.

The arbiter, in matters of "custom law," is at first the head of the family and later the chief of the group. But when modification of old or establishment of new laws is demanded, when novel and more complex conditions of social development appear, the authority of the chief is not sufficient, and recourse is had to the ancestor's spirit or, as later happens, to the ghost of some revered chief or, still later, to the nation's God. Thus Moses derived from divine behest not only the Ten Commandments, but also the entire Mosaic law; and in the case of the Greeks, after the Doric migration, "no new political institutions, no fresh culture, no additional games were established without the sanction of the Pythian oracle." We find so far no distinction between political and religious law; in the Mosaic law sins against God and sanitary defaults are listed together; and in the

Code of Manu there is a like mixture of sacred and secular regulations, of moral dictates and rules for carrying on ordinary affairs. Furthermore, the judge of the law was himself a priest or was directly ordained by his God or finally was a direct descendant of God. At this stage it is evident that law rests principally, if not solely, upon the religious motive, and there is ample justification for the view that, historically regarded, law here has its first beginning. Psychologically, however, the inquiry must be pushed to the lower level; for law can come into being only in consequence of a demand which is inherent in the nature of society, a "need" which we find expressed in custom and which in its turn is explained in terms of social instincts.

The subsequent history of law, from the psychological point of view, is concerned with the cleavage between religious and political laws. This comes about (1) through a gradual substitution, where political matters are concerned, of allegiance to the state for the primitive allegiance to the ancestral spirit, and (2) through the gradual development of the idea that the infringement of law is an injury to the state, and, as such, is punishable by the state. In this transformation, however, the religious motive is still operative, as may be seen both in the universal appeals of modern judges to precedent and also in the court paraphernalia, in the formalities of observance and the solemn oaths. All of these things tend to enhance the dignity of the judge and to inspire reverence for the law.

Bibliography. W. Wundt, *Ethics*, vol. i (Eng. trans., New York, 1897); id., *Elemente der Völkerpsychologie* (Leipzig, 1913); E. A. Ross, *Social Control* (New York, 1901); Herbert Spencer, *Principles of Sociology* (3 vols., ib., 1900-01); J. G. Tarde, *Laws of Imitation*, translated by E. C. Parsons (ib., 1903); Sir John Lubbock, *Origin of Civilization* (ib., 1905). For the psychology of legal practice, see TESTIMONY.

LAW, PUBLIC. See PUBLIC LAW.

LAW, SALIC. See SALIC LAW.

LAW, SUBSTANTIVE. See SUBSTANTIVE LAW.

LAW, WILLIAM (1686-1761). An English devotional author. He was born at King's Cliffe, near Stamford, Northamptonshire, and graduated M.A. at Emmanuel College, Cambridge, in 1712. A strong Tory sympathizer, he refused to take the oath of allegiance on the accession of George I. His writings are deeply tinged with mysticism; in later life he was a follower of Jakob Böhme. His *Serious Call to a Devout and Holy Life* (1729) first awakened the religious sensibilities of Dr. Johnson, who speaks of it in high terms. The Wesleys also derived much advantage from it and became intimate with Law, but later rejected his teachings. His other writings include: *Remarks upon Mandeville's Fables of the Bees* (published 1724; republished with an introduction by Maurice, 1844), *The Absolute Unlawfulness of the Stage Entertainment Fully Demonstrated* (1726); letters to the Bishop of Bangor (1717-19); and some very able attacks on the rationalism of his day. His collected works were published in London in nine volumes in 1762. His *Serious Call* has been many times reprinted. A selection from his works, by Palmer, *Liberal and Mystical Writings*, was published in New York, (1905). Consult: J. H. Overton, *Law; Non-*

juror and Mystic (London, 1881); Alexander Whyte, *Characters and Characteristics of William Law* (New York, 1898); W. R. Inge, *Studies of English Mystics* (ib., 1906).

LAWES, SIR JOHN BENNETT (1814-1900). A celebrated English agriculturist, born at Rothamsted, Hertfordshire. He was educated at Eton, Oxford, and London, entered upon the management of the paternal estate of Rothamsted in 1834, and three years later commenced experiments with plants grown in pots of soil. He early discovered a process for transforming bone into superphosphate by the use of sulphuric acid, took out a patent in 1842, and built up an extensive business which he managed for about 30 years. In 1867 he engaged in the manufacture of tartaric and citric acids and continued in this business until his death. The experimental inquiries at Rothamsted were enlarged in 1843 by the employment of Dr. (afterward Sir) J. H. Gilbert to superintend the laboratory work. For more than 50 years Lawes and Gilbert conducted elaborate agricultural investigations. The field experiments were enlarged and systematized until they occupied nearly 40 acres in 1856. Experiments with animals were begun in 1847, and a variety of problems in animal nutrition have since been studied. In 1889 Sir John transferred the laboratories and experimental fields of Rothamsted to a board of trustees with an endowment of about £100,000. He made provision for a biennial course of lectures in the United States on the Rothamsted work. He was created a baronet in 1882, in recognition of his great services to agriculture. Consult: *Royal Society of London, Philosophical Transactions* (London, 1859, 1880-89, 1900); *British Association for the Advancement of Science, Reports* (ib., passim); *Bulletins 6 and 22 of Office of Experiment Stations, United States Department of Agriculture, A. D. Hall, The Book of the Rothamsted Experiments* (ib., 1905).

LAWES, WILLIAM GEORGE (1839-). An English Congregational missionary. He was born at Aldermaston, Berkshire, and studied at Mortimer and Bedford. Upon his ordination to the Congregational ministry in 1860 he was sent to Niue or Savage Island, where he remained for 10 years. Going to New Guinea in 1874, he and his Scottish colleague, James Chalmers, aided the establishment of a British protectorate in 1884 and annexation in 1888; and at Vatorata he founded in 1896 a training school for native teachers. He retired in 1906. He translated the New Testament into Motu and the language of Niue and wrote a *Grammar of Motu* (1885; 3d ed., 1890).

LAWES-WITTEWRONGE, laz'-wit'rong, SIR CHARLES (1843-1911). An English sculptor. He was born at Teignmouth and was educated at Trinity College, Cambridge. His work as a sculptor is strong and bold in treatment and full of vigorous action, but often lacking in repose and refinement. His best-known pieces are the colossal bronze group "They Bound Me On" (1888), and the high relief "United States of America" (1890), consisting of 10 female figures. In later work he treated sculpture as secondary to architecture rather than as a separate art. He was president of the Incorporated Society of British Sculptors and was also strongly interested in agricultural science and athletics.

LAWLESS, HON. EMILY (1845-1914). An

Irish novelist, daughter of Edward, third Baron Cloncurry. At her best as a novelist, she essayed also poetry, history, and biography. In 1905 Dublin University gave her an honorary Litt.D. She is the author of, notably, *Hurriah* (1886), a novel; *Ireland* (1887), a brief history in the "Story of the Nations Series"; *Plain Frances Mowbray* (1889); *Grania* (1892), her strongest novel; *Maelcho* (1894), an historical romance, *With Essex in Ireland* (1890); *A Garden Diary* (1901); *With the Wild Geese* (1902), poems; *Marsa Edgeworth* (1904), an inadequate critical biography; and *The Book of Gilly* (1906).

LAWLEY, GEORGE (1823-1915). An American yacht builder, born in London, England. In 1851 he emigrated to the United States, and after 1854 he was engaged in shipbuilding, first in Boston, then (1866-74) at Scituate, Mass., and finally again in Boston, with his son George F. Lawley as partner. The firm of Lawley & Son built the *Puritan*, which defended the *America's* cup in 1885, and the *Mayflower*, which defended it in the following year. Lawley retired from active business when his firm was incorporated with a capital of \$100,000 in 1890, and his son became the active head.

LAW LIBRARIES IN THE UNITED STATES. See LEGAL EDUCATION

LAW MERCHANT. Originally the body of rules governing the various communities of merchants throughout Europe, and administered by special local tribunals, known as piepowder courts (q.v.), staple courts, and merchants' courts (q.v.). The procedure of the law merchant as well as its substantive rules differed widely from those of the early common law. Its courts were expeditious, seeking not only to do justice, but to do it speedily. Judges for these tribunals were selected because of their knowledge of the law merchant, and were bound to administer that law and not the common law of the land, nor the peculiar local usages of the cities, towns, or boroughs where they sat. During the seventeenth century the courts which specially administered this body of law died out in England, their jurisdiction being gradually assumed by the common law and equity tribunals of the realm. From this time to the accession of Lord Mansfield as Chief Justice, the term "law merchant" was employed in quite an indefinite sense. The common-law judges and juries were not versed in the legal usages of merchants. When mercantile controversies came before them, it was often necessary to call merchant witnesses to prove what the law merchant applicable to the particular case was, although, if the mercantile custom involved was notorious, the ordinary courts would take judicial notice of it.

The third period in the history of the law merchant in England embraces the latter half of the eighteenth century and most of the nineteenth. Lord Mansfield conceived that the usages of merchants in all countries rested upon the same general principles, and that the law merchant was a branch of the *jus gentium*, or law common to all nations. As Chief Justice, he devoted his great energies to the development of a body of legal rules which should be based not on the common-law doctrines of England, but upon principles which commercial convenience, public policy, and the customs and usages of merchants had contributed to establish, with slight differences, over all Europe. In

the United States his work was carried forward by Chancellor Kent, Justice Story, and others. As a result of this movement, the law merchant and the common law are no longer distinct and separate bodies of legal rules. To a large extent they have become amalgamated and are administered by all legal tribunals as a single system. At the present time, therefore, "law merchant" does not designate a separate and distinct body of law, as it did formerly, but is applied to various branches of English law, in which the old usages of merchants still survive to a considerable extent, or which have sprung out of modern business needs and customs, such as agency, bailments, insurance, bills and notes, partnership. Consult the authorities cited under those titles, also J. W. Smith, *Compendium of Mercantile Law*, Macdonnell's Introduction (11th ed., 2 vols, London, 1905); T. E. Scrutton, *The Elements of Mercantile Law* (London, 1891); "The Early History of the Law Merchant in England," in *Law Quarterly Review*, vol. xvii (London, 1901); F. M. Burdick, *The Essentials of Business Law* (New York, 1902); "What is the Law Merchant?" in *Columbia Law Review*, vol. ii (ib., 1902); *Select Cases Concerning the Law Merchant*, A. D. 1270-1638; edited for the Selden Society by Charles Grass (London, 1908).

LAWN (older forms *lawnd*, *laund*, OF. *lande*, *launde*, Fr. *lande*, heath, from Ir. *land*, OWelsh, Bret. *lann*, Corn. *lan*, open space; ultimately connected with Goth., AS., Eng. *land*, OHG. *lant*, Ger. *Land*, land). A smooth, even, well-kept turf or greensward, intended solely for ornament and pleasure. The hot and dry summers which frequently prevail in the United States are injurious to grass; but, as the lawn is usually limited in extent, this obstacle is overcome by controlling the moisture conditions. Good velvety turf can be maintained in moderately dry climates, even in times of intense and prolonged heat and drought by daily supplying the necessary moisture. In no instance is the condition of the soil a more important factor than in lawn making. The best soil for this purpose is a sandy loam of fine texture with a clay subsoil, the most favorable combination for either wet seasons or times of drought. A clay soil bakes too readily, and an open sandy or gravelly soil is not sufficiently resistant of drought. Before the soil is prepared to receive the grass seed, it is drained, if it has inadequate natural drainage, and then graded to give it the desired contour. The ordinary dooryard lawn is usually level, but the extensive lawns of parks combine in their contour the level, the convex, and the concave, gracefully merging into each other.

The preparation for the grass seed consists in working the soil with the plow and subsoiler or the spade to a depth of at least one foot. All stones and rubbish are removed to obtain a clean, fine, and well-tilled seed bed. A rich soil is essential, and the land for a lawn should be enriched by heavy applications of well-rotted barnyard manure or when the manure cannot be obtained by a heavy dressing of commercial fertilizers. A complete commercial fertilizer, i.e., a fertilizer containing nitrogen, phosphoric acid, and potash, is used, and liberal quantities of lime and bone meal are worked into the soil in addition. The selection of grasses is determined by the climate of the locality, and the color, texture, and sod-forming habit of the dif-

ferent species. The most common grasses combining the qualities of a lawn grass to a greater or less extent are Kentucky blue grass, fescue grass, bent grass, St. Augustine grass, and Bermuda grass. The finer varieties of fescue and bent grasses form an especially soft and elastic turf, qualities highly esteemed in a lawn. St. Augustine grass and Bermuda grass are well adapted to warm climates and are extensively used as lawn grasses in the southern United States. In order to obtain evenness in the texture of the turf and the color of the lawn, it is customary to sow only one kind of grass. Mixtures of different grasses, however, are also frequently used. A light, scattered stand of white clover is often considered desirable. The grass seed is sown thickly, from 50 to 75 pounds being used per acre. Care should be taken not to introduce weed seeds in the manure or with the grass seed. The time of seeding depends upon the climate and the prevailing weather. The seed should be sown when the conditions for its growth are the most favorable. Moisture is an absolute requirement, and for this reason sowing shortly before an expected rain is the common practice. Windy weather prevents the even scattering of the seed. In general, sowing is done during the moist months of spring, but where conditions permit in the early fall. After the soil has been made perfectly smooth and fine, the seed is scattered evenly over the surface and thinly covered with a fine-toothed iron rake, followed by an iron roller. To avoid covering the seed too deeply, the land is sometimes rolled without the previous use of the rake.

Small grassplugs are often covered with transplanted turf instead of beginning with the seed. When the grass has grown several inches high, mowing with the lawn mower is begun and repeated at short intervals. Frequent mowing and rolling improves the turf. During dry summers, when there is danger of exposing the roots to the drying action of the hot sun, too frequent mowing is injurious. The lawn should be rolled at least once each spring when the weather is moist, for the purpose of compacting the turf. To keep up the fertility of permanent lawns, land plaster, nitrate of soda, and hardwood ashes are applied as top dressings in the spring, or a dressing of fine compost is applied in the fall. Consult: Leonard Barron, *Lawns and How to Make Them* (New York, 1906); L. C. Corbett, "The Lawn," in *Farmers' Bulletin*, No. 248 (Washington, 1906); Schreiner and Skinner, "Lawn Soils," in *Farmers' Bulletin*, No. 494 (ib., 1912); L. J. Doogue, *Making a Lawn* (New York, 1912); C. P. Kelligan, "Starting a Lawn," in *Michigan Experiment Station, Circular*, No. 20 (Lansing, 1913).

LAWN TENNIS. A game played with racket and ball on a court crossed at the centre by a net. It is the modern development of the ancient game of tennis, (q.v.), the same methods being used in scoring the games and set. While primarily a summer game, played on closely cut grass lawns or on hard earth, marked with lines of whitewash, it also is played in winter, on the floors of armories and gymnasiums.

The outside dimensions of the court for the singles game, one player against another, are 78 feet in length and 27 feet in width. For the doubles game, in which four persons play, the dimensions are 78 feet in length and 36 feet in width, the extra 9 feet in width being taken up by side courts, each of which is $4\frac{1}{2}$ feet wide.

The modern game of lawn tennis was first played in England about 1874 and introduced into America a year later by Dr. James Dwight and the Sears brothers, R. D. and F. R., at Nahant, Mass.

To Major Wingfield, of England, credit must be given for inventing the fundamental principles of the game as played at present. He took out a patent, calling the game Sphairistike, and the following year, under the name of lawn tennis, it was officially adopted by the Marylebone Cricket Club. In 1877 the first All-England lawn tennis championship was held at Wimbledon, Spencer W. Gore winning the title. Every year since then the championships of England have been held at Wimbledon.

William and Ernest Renshaw developed the game greatly, introducing the volley and the smash stroke. They won the doubles championship eight times, from 1880 to 1889, and William Renshaw captured the singles title no less than seven times. H. F. Lawford was another successful player of that period, specializing in the nonvolleying game.

It was not until the year 1885 that the permanent features of lawn tennis were adopted and the present measurements and marking of the court and the height of the net settled upon. These are as follows. The net is attached to two posts standing 3 feet outside of the court on either side. At the posts the net is 3 feet, 6 inches in height and in the centre is 3 feet. Midway between the side lines of the court and parallel with them is drawn the half-court line, dividing the space on each side of the net into two equal parts, called the right and left hand courts. On each side of the net and running parallel to it are drawn the service lines at a distance of 21 feet from it. The double, or side, courts are created by simply increasing the width of the entire court by $4\frac{1}{2}$ feet on each side, with the outer longitudinal lines running parallel to the half-court line.

The players decide the choice of courts and the right to serve first by tossing the racket in the air. They stand on opposite sides of the net, the one who first strikes the ball being called the server and the person who receives the ball being termed the striker-out. The service alternates at the end of each game, and the ball is delivered from the right to the left-hand court, alternately. The server must stand behind the base line (the end of the court). The ball must drop between the service line, half-court line, and side line of the court diagonally opposite to that from which it is served.

Each stroke counts 15 for the player winning it, except that the third winning stroke makes the score read 40 instead of 45. If both players win three strokes, the score is termed "deuce" instead of forty-all. The winner of the next stroke scores "advantage," and if he wins the succeeding stroke also he captures that game, but if he fails to win the two strokes in succession, the score goes back to deuce. If one player scores four points and the opponent does not score at all, then the first player wins a "love" game.

The player who first wins six games takes the set, unless he and his opponent should have each won five games, in which case one or the other must win two consecutive games to win the set, called a "deuce set." The players must change sides after the first, third, and every alternate game. Championship matches are usually de-

terminated by the winning of three sets out of five.

Interest in the game grew by leaps and bounds in the United States, soon after Dr. Dwight had introduced it, and in 1881 a tournament was held in New York City with 33 clubs represented. The United States National Lawn Tennis Association also was formed that year, and the English ball, measuring $2\frac{1}{2}$ inches in diameter, adopted. In the same year the first national lawn-tennis championship tournament was held on the courts of the Newport Casino, at Newport, R. I. R. D. Sears won the initial championship, his strong volleying game from close to the net completely upsetting his opponents. He successfully defended his laurels for the next six consecutive years, sweeping all before him. At the same time Sears and Dr. Dwight won the doubles championship, holding this title from 1882 to 1887 inclusive.

Each succeeding year saw steady improvement in the strength of the game played both in America and abroad, new strokes being developed and greater speed injected into the game.

The men who studied court tactics most carefully, who figured out where their opponents were going to place their returns and how best to draw the contending player out of position, were the most successful. Among the most notable players of recent years were Malcolm D. Whitman, W. A. Larned, Karl H. Behr, Dwight F. Davis, Maurice E. McLoughlin, and R. Norris Williams, 2d, who won the national title from McLoughlin in August, 1914. Beals Wright, who held the championship in 1905, was regarded by the English experts as one of the finest players ever produced in the United States.

In 1900 Dwight F. Davis presented for competition an international challenge cup, to be competed for in the country whose players held the international championship. In the same year the British Isles sent a team to the United States, consisting of A. W. Gore, H. Roper Barrett, and E. D. Black, which was defeated by the American team, comprising Whitman, Larned, Ward, and Davis. In 1902 England again sent a team overseas in quest of the cup, R. F. and H. L. Doherty and Dr. Joshua Pim being the challengers; but they met with no better success than their predecessors, being defeated by the same team of American players.

Once more, in 1903, the two Doherty brothers, the most famous players in England, challenged for the cup, and this time were successful in their quest, defeating Larned and R. D. and G. L. Wrenn, Jr., at Longwood, Mass. For the first time the trophy offered by Davis left the land of its birth and was borne to England by the victorious Dohertys. England retained possession of the cup until 1907, defeating France, Belgium, Austria, America, and Australia in 1904, 1905, and 1906.

Australasia put forward a formidable team in 1907 and captured the trophy, retaining it the following year through the brilliant playing of Norman E. Brookes and Anthony F. Wilding, who defeated the American team which had qualified as the challenging combination by vanquishing the representatives of the British Isles in America. In 1909 only the United States and Australasia competed, McLoughlin and M. H. Long, the American pair, being defeated in Australia in both singles and doubles.

In 1910 there was no challenge from any of the nations, but the following year America,

after defeating the British Isles in the final round, lost to Australasia in the challenge round, Larned, McLoughlin, and Beals Wright composing the American team. In 1912 the United States failed to send a team to the antipodes, and the Davis Cup went to England, Brookes, Heath, and Dunlop, for Australasia, being unable to withstand the assaults of Park, Beamish, and Dixon.

The year 1913 saw the Davis Cup return once more to the United States when McLoughlin, Williams, and H. H. Hackett, after going successfully through the preliminary international rounds, faced Parke, Dixon, and H. Roper-Barrett, of the British Isles, at Wimbledon, and defeated them by three matches to two.

The cup was not destined to remain long in the United States, however, for in August, 1914, on the courts of the West Side Tennis Club, at Forest Hills, L. I., Norman E. Brookes and Anthony F. Wilding, the Australasians, who had successfully come through to the challenge round, defeated the American team of McLoughlin, Williams, and T. C. Bundy, by three matches to two. The Davis Cup was again lost to America.

Although the United States could not retain the cup, Maurice McLoughlin gained the reputation of being the world's greatest player by defeating the two great Australasians in the singles, whereas Williams lost to both the challengers, who also defeated McLoughlin and Bundy in the doubles.

Bibliography. J. M. Heathcote and others, *Tennis, Lawn Tennis, Racquets* (new ed., London, 1903); R. F. and H. L. Doherty, *On Lawn Tennis* (New York, 1903); J. H. Paret, *Lawn Tennis: Its Past, Present, and Future* (ib., 1904); A. W. Myers (ed.), *Lawn Tennis at Home and Abroad* (ib., 1903); id., *Complete Lawn-Tennis Player* (Philadelphia, 1908); E. B. Dewhurst, *Science of Lawn Tennis* (ib., 1910); D. K. D. Lambert-Chambers, *Lawn Tennis for Ladies* (New York, 1910); G. E. Walsh, *Making a Tennis Court* (ib., 1912); R. D. Little, *Tennis Tactics* (ib., 1913), Wright and Ditson, *Official Lawn Tennis Guide* (Boston, annually); *Lawn Tennis Handbook* (London, annually).

LAW OF PAPAL GUARANTEES. See PAPAL GUARANTEES, LAW OF.

LAW OF THE TWELVE TABLES. See TWELVE TABLES, LAW OF THE.

LAWRANCE, JOHN (1750-1810). An American lawyer and legislator, born in Cornwall, England. At the age of 17 he emigrated to America and settled in New York City, where he studied law, and where in 1772 he was admitted to the bar. His success in his profession was immediate. He threw himself into the Revolutionary movement with ardor and received a commission in the first regiment of New York militia, organized by his father-in-law, Alexander McDougall. In October, 1777, he became an aid on the staff of Washington, and in 1780 as Judge-Advocate-General presided at the trial of Major André (q.v.). After the war he resumed the practice of law in New York and in 1785-87 was in the Continental Congress, where he strongly advocated the proposed Constitution. This led to his being superseded in 1788 by an Anti-Federalist. In 1789 he was elected to the New York State Senate and in the same year was elected a member of the First Congress under the new Constitution. He was also a member of the Second

Congress (1791-93) and in 1794 was appointed by President Washington United States Judge for the District of New York. In 1796 he resigned from the bench to take his seat in the United States Senate, to which he had been elected to succeed Rufus King. He remained in the Senate until 1800 and was President pro tempore of that body in 1798-99. He was a staunch supporter of Hamilton and was particularly opposed to any compromise between the Federalists, of which party he remained up to his death one of the principal leaders, and the Burrists.

LAWRENCE. A city and the county seat of Douglas Co., Kans., 41 miles west by south of Kansas City, on both sides of the Kansas River, and on the Atchison, Topeka, and Santa Fe and the Union Pacific railroads (Map: Kansas, G 5). The city is well laid out, with wide, well-paved streets, and has many attractive buildings, including a fine courthouse, Federal building, Carnegie library, Y. M. C. A., and splendid school buildings. It is the seat of the State University (see KANSAS, UNIVERSITY OF), founded in 1866 on Mount Oread, and of the Haskell Institute, one of the United States government's three great industrial schools for Indians, which occupies a site of 600 acres. Lawrence is situated in a fertile agricultural and stock-raising region, but is important chiefly as a commercial centre, and its manufacturing interests, which are considerable, are promoted by excellent water power. The industrial establishments include flouring and paper mills, manufactures of collars, shirts, sashes, doors, pianos, vitrified brick and tile, a foundry and machine shop, and a creamery. The city adopted the commission form of government in 1914. Lawrence (named in honor of Amos A. Lawrence) was the first of the "free-State" towns founded by the Emigrant Aid Society in 1854, immediately after the passage of the Kansas-Nebraska Bill (q.v.), and was for several years the headquarters of the Antislavery party in Kansas. In November and December, 1855, during the so-called Wakarusa War, it was besieged for a short time by a force of proslavery men; and on May 21, 1856, it was occupied and partially destroyed by another proslavery force. On Aug. 21, 1863, a body of Confederate raiders under Quantrell almost completely destroyed it and killed 123 of its citizens. Pop., 1900, 10,862; 1910, 12,374; 1914 (U. S. est.), 13,018. See KANSAS.

LAWRENCE. An important manufacturing city in Massachusetts, county seat of Essex County, 24 miles north by west of Boston, situated on both sides of the Merrimac River, and on several branches of the Boston and Maine Railroad (Map: Massachusetts, E 2). It includes the villages of Arlington District, Carltonville, and Halleville. The Merrimac at this point has a descent of 26 feet in half a mile, affording water power estimated at 11,900 horse power, controlled by a dam of solid granite, 900 feet long and 30 feet high, thrown across the rapids, and by canals on each side of the river, the first of which was opened in 1846. An 18-foot channel to the sea is in the process of construction (1915).

In the manufacture of woollen cloths Lawrence ranks first among the cities of the United States, and the Pacific Mills Print Works are among the largest of their kind in the world. The value of this product manufactured in 1909

was \$58,536,000. Other manufactures include paper, paper-mill machinery, foundry products, carriages, cotton goods, sashes, doors, and blinds, engines, boilers; belting, shoes, and wheels. Features of interest in the city are the large public library, Essex County Training School, Children's Home, Cottage and Lawrence hospitals, the courthouse, and a park system comprising 156 acres. There are also several bridges across the river, numerous private charitable institutions, and a number of county buildings. The government is vested in a commission of five. In 1914 Lawrence spent about \$1,300,000 for maintenance and operation, the principal items of expenditure being \$380,000 for schools, \$118,000 for charitable institutions, \$120,000 for the police department, \$109,000 for the fire department, and \$90,000 for public health and sanitation. The water works are owned by the municipality. Pop., 1850, 8282; 1870, 28,921; 1900, 62,559; 1910, 85,892, of which number 41,319 were of foreign birth; 1914 (U. S. est.), 95,834.

Lawrence was created by Act of the Legislature, March 20, 1845, out of parts of Methuen and Andover and was incorporated as a city May 10, 1853. It was the scene of severe labor disturbances in 1912. Consult Wadsworth, *History of Lawrence, Mass.* (Lawrence, 1880).

LAWRENCE, ABBOTT (1792-1855). An American merchant, legislator, and diplomat. He was born in Groton, Mass., was educated in a district school, and at the Groton Academy (now Lawrence Academy), removed to Boston in 1808, and there served an apprenticeship in the warehouse of his elder brother, Amos, with whom in 1814 he founded the famous firm of A. & A. Lawrence. Lawrence also took an active interest in several railroad enterprises, was president of the Essex Company, which in 1845 founded Lawrence, Mass. (named in his honor), and towards the latter part of his life was largely engaged in the China trade. From 1835 to 1837, and again from 1839 to 1840, when ill health forced him to resign, he was a member of Congress; and in 1842 he was one of the commissioners of Massachusetts who coöperated with the commissioners of Maine and with Daniel Webster, then Secretary of State, in negotiating the Webster-Ashburton Treaty (q.v.) concerning the northeast boundary of the United States, with England's representative, Lord Ashburton. He declined the portfolios of the Navy and of the Interior in President Taylor's cabinet. He was United States Minister to England from 1849 to 1852, in which capacity he rendered important services to the country and became widely popular with the English people, though in 1852, wishing to devote his attention wholly to his business interests, he was recalled at his own request. He was a firm believer in protection, representing Massachusetts at the Harrisburg Convention in 1827. He made many donations to charitable institutions and in 1847 contributed \$50,000 for the establishment of a scientific school at Harvard, which was named in his honor, and to which by will he subsequently contributed another \$50,000. He left a like sum for the erection of model lodging houses for the poor, the surplus income from which was to be forever applied to charitable purposes. Consult H. A. Hill, *Memoir of Abbott Lawrence* (2d ed., Boston, 1884).

LAWRENCE, Amos (1766-1852). An Amer-

ican merchant and manufacturer, born at Groton, Mass., and educated at the Groton Academy founded there by his father. After working as a clerk for several years, he embarked (1807) in the dry-goods business on his own account in Boston. In 1814 he formed a partnership with his brother, Abbott Lawrence (q.v.), and the firm became the foremost wholesale mercantile establishment in the country. He is best known for his connection with the cotton manufacturing industry in New England, the cities of Lawrence and Lowell owing their preëminence in this branch of industry largely to his efforts. Ill health compelled him to retire from active participation in business in 1831, and the later years of his life were spent largely in furthering various philanthropic enterprises. He contributed largely to the building of the Bunker Hill Monument and gave large sums to Williams College and to the academy at Groton, Mass., which in 1843 was renamed Lawrence Academy in honor of the family.

LAWRENCE, AMOS ADAMS (1814-86). An American philanthropist, son of Amos Lawrence. Born in Boston, he graduated from Harvard University in 1835, and then became connected with banking and mercantile undertakings, particularly textile. . . . He supported the antislavery element in the colonization of Kansas and assisted in recruiting a cavalry regiment for the Civil War. In 1849 he gave \$10,000 to found the Lawrence Institute of Wisconsin (now Lawrence College), at Appleton, Wis., and subsequently gave more than \$30,000 to support the institution. His benevolences include also Lawrence Hall for the Episcopal Theological Seminary at Cambridge, Mass., built in 1873-80 at a cost of \$75,000. The city of Lawrence, Kans., was named for him.

LAWRENCE, FREDERICK WILLIAM PETHICK (1871-). An English reformer. He was educated at Eton and at Trinity College, Cambridge, of which he became a fellow in 1897. He traveled widely; was prominent in university settlement work; was Liberal Unionist candidate for Parliament from North Lambeth in 1900, but withdrew because he opposed the Boer War; visited South Africa and worked for the South African Women's and Children's Distress Fund. He edited the *Echo*, a London evening paper, from 1902 to its failure in 1905, when it was said that he settled its debts. In 1901 he had married Emmeline Pethick, with her he became a leader and financial backer of the militant suffragette movement and was joint editor of its organ, *Votes for Women*. Mr. and Mrs. Pethick Lawrence and Mrs. Pankhurst were arrested in March, 1912, charged with conspiring to break windows; in May they were sentenced to nine months' imprisonment, but were released before the end of June. Pethick Lawrence refused to pay costs and was made bankrupt until the sum was collected in 1913 from his estate. Late in 1912 he and his wife withdrew their aid from Mrs. Pankhurst's militant Social and Political Union. Mrs. Pethick Lawrence visited New York in 1914 and spoke on the European War.

LAWRENCE, GEORGE ALFRED (1827-76). An English novelist, born in Braxted, Essex. He was educated at Oxford and studied for the bar, but afterward gave all his time to literature. His most famous book, *Guy Livingstone, or Thorough*, was published in 1857. At the opening of the Civil War he went to the United

States to enlist in the Confederate army, but was arrested, and released subsequently on condition that he would return to England. His *Border and Bastile* (1863) chronicles this incident. His other works include: *Sword and Gown* (1859); *Barren Honour* (1862); *Maurice Dering, or the Quadrilateral* (1864); *Breaking a Butterfly: Blanche Ellerslie's Endang* (1869); *Silverland* (1873); *Hagarene* (1874).

LAWRENCE, GEORGE NEWBOLD (1806-95). An American ornithologist, born in New York City. He was in the drug business until 1862, when he left it to devote himself to ornithology, upon which he had already spent much study. His collection of 8000 specimens, bought by the American Museum of Natural History in New York City, includes not only a very full list of birds found in the United States, but more than 300 new species from Mexico, Central and South America, and the West Indies. He was a member of many scientific societies, contributed much to ornithological literature, and was a collaborator with Spencer F. Baird and John Cassin in *The Birds of North America* (1860).

LAWRENCE, SIR GEORGE ST. PATRICK (1804-84). An English soldier, born in Trincomalee, Ceylon. He was the brother of the first Lord Lawrence and of Sir Henry Montgomery Lawrence. Educated at Foyle College, Londonderry, and at Addiscombe College, he entered the army in 1822, was adjutant of his regiment, the Second Bengal Light Cavalry, from 1825 until 1834, and fought in the Afghan War. Afterward he was political assistant and secretary to MacNaghten, the Envoy to Afghanistan, and was in Kabul during the insurrection when MacNaghten was killed (1841). In 1848 he was appointed political agent at Peshawar and was prisoner for a year during the second Sikh War. Later he was active as political agent in Mewar, Rajputana, until 1857. When the great Mutiny broke out, he was for a time in command of all the forces in Rajputana. He retired with the rank of lieutenant general in 1867. His *Forty-three Years in India* was edited by Edwards and appeared in 1874.

LAWRENCE, SIR HENRY MONTGOMERY (1806-57). An English brigadier general and colonial administrator, born at Matara, Ceylon. He was the elder brother of Lord Lawrence (q.v.) and was likewise famous as an administrator. He was Chief Commissioner of Lucknow, and virtually Governor of Oudh when the Indian Mutiny broke out. While in command of the handful of heroic men who defended the women and children in the Residency of Lucknow, Sir Henry was wounded by the explosion of a shell and died July 4, 1857. He was the founder of the Lawrence Asylum at Octamund, for the reception of the children of the European soldiers in India, and was the author of a volume of *Essays, Military and Political* (1859), which were originally published in the *Calcutta Review*. St. Paul's Cathedral contains a monument to his memory. Consult: J. J. M. Edwardes and Herman Merivale, *Life of Lawrence* (3d ed., New York, 1873); Innes, *Sir Henry Lawrence* (London, 1908); F. P. Gibbon, *The Lawrences of the Punjab* (ib., 1908).

LAWRENCE, JAMES (1781-1813). An American naval officer. He was born in Burlington, N. J., entered the United States navy as a midshipman in 1792, became a lieutenant in 1802, and in 1804-05 distinguished himself in

the war with Tripoli, commanding a gunboat and serving as second in command in Decatur's expedition to burn the captured *Philadelphia* under the guns of the shore batteries. In 1808 he served as first lieutenant on the *Constitution* and then commanded successively the *Argus*, the *Vixen*, and the *Wasp* until 1811, when he was promoted to be captain and was placed in command of the *Hornet*. In 1812 he cruised with Captain Bainbridge's squadron along the South American coast, and on Feb. 24, 1813, captured the slightly inferior British brig-of-war *Peacock*, after a spirited engagement of 15 minutes, near the mouth of the Memerara River—the *Hornet* losing only one man killed and two wounded. For this success he received a gold medal from Congress and was placed in command of the *Chesapeake*, then lying in Boston harbor. On June 1, 1813, several days after taking command, he attacked the British frigate *Shannon*, about 30 miles off Boston. After a bloody engagement of 15 minutes, in which he was mortally wounded, the *Chesapeake* was captured, and Lawrence was taken with his ship to Halifax, where on the 5th he died. While being carried below during the engagement, he uttered the words "Don't give up the ship," which became a motto in the navy. Consult: J. M. Niles, *Life of O. H. Perry* (Hartford, 1821); Albert Gleaves, *J. Lawrence, Captain U. S. Navy* (New York, 1904); Roosevelt, *Naval War of 1812* (2 vols., ib., 1904).

LAWRENCE, JOHN LAIRD MAIR, first BARON LAWRENCE (1811-79). An English officer and Governor-General of India. The sixth son of Lieutenant Colonel Alexander Lawrence, he was born at Richmond, Yorkshire, March 24, 1811. He received his early training at Foyle College, Londonderry, and at Wroxall Hall, near Clifton, and in 1827 he won a presentation scholarship to Haileybury College, where he obtained the prize for Bengali, and passed third in the examination for the Bengal Presidency cadetship. He landed at Calcutta in February, 1830, and for many years was employed at Delhi as a magistrate and a land-revenue officer. On the annexation of the Punjab Lawrence was appointed Commissioner and afterward Lieutenant-Governor of the Punjab. The restless Sikhs became so attached to his firm and beneficent rule that at the outbreak of the Indian Mutiny Lawrence was enabled to send troops to the relief of Delhi and elsewhere and thus was instrumental in maintaining British dominion in India. On his return to England he received the thanks of Parliament, with the grant of a pension of £1000 a year. He was made Baronet in 1858 and Privy Councillor in 1859. In 1861 Lawrence was created a Knight of the Star of India. At the close of 1863 he was appointed to succeed Lord Elgin as Viceroy of India and was made a member of the India Council. His administration lasted until 1869, in which year he was created Baron Lawrence of the Punjab and of Grately. At the first election of the London School Board, in 1870, Lord Lawrence was elected chairman. He died June 26, 1879, and was buried in Westminster Abbey. Consult: R. B. Smith, *Life of Lord Lawrence* (New York, 1883); Richard Temple, *Lord Lawrence* (London, 1889), in the "English Men of Action Series"; F. M. Holmes, *Four Heroes of India* (ib., 1892); C. U. Aitchison, *Lord Lawrence and the Reconstruction of India under the Crown* (Oxford, 1897), in the "Rulers of India

Series"; F. P. Gibbon, *The Lawrences of the Punjab* (London, 1908).

LAWRENCE, SAINT, THE DEACON. One of the most celebrated martyrs of the early Church, the subject of many ancient panegyrics and of one of the most elaborate of the hymns of Prudentius. He was one of the deacons of Rome in the pontificate of Sixtus II (257-258) and as such was especially charged with the care of the poor and the orphans and widows. In the persecution of Valerian, being summoned, according to the legend, before the prætor as a Christian, and being called on to deliver up the treasures of the Church, he mockingly produced the poor and sick of his charge, declaring that "those were his treasures"; and on his persisting in his refusal to sacrifice, being condemned to be roasted on a gridiron, he continued throughout his tortures to mock his persecutors. Many of the details of his martyrdom are probably due to the imagination of the poetical narrator; but the martyrdom is unquestionably historical and dates from the year 258. His feast is celebrated on August 10. The ground plan of the Escorial (qv) is supposed to be that of a gridiron in representation of the instrument of the martyr's death. It was erected in his honor, because on his day, Aug. 10, 1557, the forces of Philip II of Spain won a great victory over the French at Saint-Quentin.

LAWRENCE, STRINGER (1697-1775). An English soldier, born at Hereford. He was appointed ensign at Gibraltar in 1727, later served in Flanders, and in 1748 went to India with the rank of major to hold chief command of the East India Company's troops. He defeated the French at Cuddalore that same year, but was captured at Ariancopang and was held a prisoner until the Peace of Aix-la-Chapelle. In 1749 he captured Devicota in Tanjore, Robert Clive then serving under him as lieutenant. After a stay in England in 1750-52, Lawrence relieved Trichinopoly in 1752, defeated a superior force of French at Bahur in the same year, and again relieved Trichinopoly in 1753. He was superseded in the chief command by Col. John Adlercron in 1754, but volunteered to serve with that officer in 1757 in the fighting around Wandiwash. Holding the local rank of brigadier general, he commanded in various operations in 1757-59, including the defense of Fort St. George during the siege by the French in 1758. He returned to England in 1759 with the rank of major general. The East India Company erected a monument to him in Westminster Abbey.

LAWRENCE, SIR THOMAS (1769-1830). An English portrait painter. He was born at Bristol, May 4, 1769. His father, who had been educated for the law, was an actor and afterward an innkeeper. At the age of 10 Lawrence portrayed the notables of Oxford in crayon, and when his father removed to Bath, his son's studio, although he was but 12 years old, was a favorite resort of beauty and fashion. In his seventeenth year he began to paint in oils, and in 1787 he went to London, exhibiting a number of paintings and portraits at the Academy, the schools of which he entered. His attractive manner and appearance won his way into high society, and in 1789 he had attained court patronage, and in the following year his portrait of the actress Miss Farren (Countess of Derby) established his reputation. This portrait, now in the J. Pierpont Morgan collection (Metro-

politan Museum, New York), was never surpassed by his later works. In 1791 George III induced the Academy to elect him an associate against its own rules, since he was only 21—an honor never since repeated. In 1792 he succeeded Sir Joshua Reynolds as painter to the King, whose portrait he painted in the same year. He was in high favor with George IV, who knighted him in 1815.

In 1818 he was sent to Aix-la-Chapelle to portray the European sovereigns and nobles there assembled at the congress for regulating European affairs, including the emperors of Austria and Russia, the King of Prussia, and Prince Metternich. At Rome he was received as a second Raphael and assigned apartments in the Quirinal, where he painted two of his best portraits, those of Pius VII and Cardinal Gonsalvi. He was made a member of the academies of Rome and Florence, and on the evening of his return to England, in 1820, he was elected president of the Royal Academy. In 1825 he was sent to Paris to portray the King and the Dauphin. He possessed one of the finest collections of drawings of the old masters ever in private hands, part of which is now in the Museum of Oxford. He died in London, Jan. 7, 1830.

Sir Thomas was the most celebrated portrait painter of his day, but, in the reaction against former extravagant praises, scant justice is now done him. He had an unusually acute perception of the graces of society—the elegant airs of the men and the gracious smiles of the ladies. His execution was facile and at best wonderfully free and sure, his composition and draftsmanship were good, but his portraits often lacked character, and his color, though brilliant, was sometimes hard and glassy. He succeeded best in his portraits of women, with whom indeed he was more popular. His impressionable nature involved him in many love affairs, the most interesting of which, his alternating affection for the two daughters of the celebrated actress Mrs. Siddons, is described in the work by Knapp cited below. His best works are his drawings in crayon and pencil. His few historical pieces were of little value. Among his most notable portraits are the series of the participants in the Congress of Aix-la-Chapelle, noticed above, in Waterloo Gallery, Windsor Castle. The National Gallery possesses those of Angerstein, Benjamin West, Mrs. Siddons, Miss Caroline Fry, Mrs. Francis Robertson, J. P. Kemble as "Hamlet," Princess Lieven, Philip Sanson, and "Child with a Kid." In the South Kensington Museum are those of Queen Caroline, Sir C. E. Carrington, his first wife Paulina, Thomas Wentworth and his Secretary, and "Head of a Lady." In the Wallace collection are Miss Maria Siddons, portrait of a Lady, and the Countess of Blessington. In the National Portrait Gallery, there are George IV, Lord Eldon, Wilberforce, Warren Hastings, and Thomas Campbell. The Metropolitan Museum of Art possesses four good examples, Lady Ellenborough, Rev. William Pennicott, Miss Baring, and John Julius Angerstein. Lawrence is well represented in American private collections, as those of E. T. Stotesbury, Philadelphia, and the Walters Gallery (Baltimore), which contains the Countess of Sutherland, the Countess of Wilton, and Mrs. Foote. In the Boston Art Museum are Lord and Lady Lyndhurst and several others.

Bibliography. The best monographs on Lawrence are by Lord Ronald Gower (London, 1900) and Sir Walter Armstrong (ib., 1913). Other works of interest are Williams, *Life and Correspondence of Sir Thomas Lawrence* (London, 1831); Lewis, *Imitations of Sir Thomas Lawrence's Finest Drawings* (ib., 1839); Knapp (ed.), *An Artist's Love Story: Told in the Letters of Sir T. Lawrence, Mrs. Siddons, and her Daughters* (ib., 1905).

LAWRENCE, SIR WILLIAM (1783-1867). A distinguished English surgeon, born at Cirencester in Gloucestershire. He was apprenticed in London in 1800 to Mr. Abernethy, by whom he was appointed demonstrator of anatomy at St. Bartholomew's Hospital in 1803. He was made surgeon to the hospital and was chosen fellow of the Royal Society in 1813. In 1815 he became one of the professors of anatomy to the Royal College of Surgeons and in 1828-29 succeeded his teacher, Abernethy, as lecturer on surgery at St. Bartholomew's. Taking from this period onward an active share in questions of reform, Lawrence made innumerable enemies, though his reputation as a surgeon and the importance of his position as a medical practitioner, together with his fame as a valuable contributor to medical literature, continued to bring him into recognition and power. As sergeant surgeon to the Queen of England, he succeeded Sir Benjamin Brodie, receiving at the same time a baronetcy. Lawrence died of paralysis at Whitehall. His writings are very numerous; the following are the most important: *A Description of the Arteries of the Human Body, Reduced into the Form of Tables*, translated from the Latin of Adolphus Murray, professor of anatomy at Upsala; *The Treatment of Hernias; An Introduction to Comparative Anatomy and Physiology, being the Introductory Lecture delivered at the Royal College of Surgeons in 1819* (1819); *A Treatise on the Venereal Diseases of the Eye* (1830); *A Treatise on the Diseases of the Eye* (1843); *A Treatise on Ruptures* (1810; 5th ed., 1838); *The Hunterian Oration Delivered at the Royal College of Surgeons, 1834* (1834); *Lectures on Comparative Anatomy, Physiology, Zoology, and the Natural History of Man* (1848).

LAWRENCE, WILLIAM (1819-99). An American jurist and politician, born at Mount Pleasant, Ohio. He graduated at Franklin College in 1838 and at the Cincinnati Law School in 1840. From 1845 to 1847 he was editor and proprietor of the *Logan County Gazette* and later edited the *Western Law Journal*. In 1846-47 he served in the Lower House of the State Legislature, in 1848-53 was a State Senator, and from 1857 to 1864 was judge of the Court of Common Pleas and of the District Court. He had some military experience at Cumberland and New Creek, in 1862, as colonel of the Eighty-fourth Ohio Volunteers; was a member of Congress in 1865-71 and in 1873-77, and in 1880 became First Comptroller of the United States Treasury—a position which he held until his resignation in 1885. Among his published works are: *The Treaty Question* (1871); *The Law of Religious Societies and Church Corporations* (1873); *The Organization of the Treasury Department of the United States* (1880); *The Law of Claims against the Government* (1875); *Decisions of the First Comptroller in the Department of the Treasury of the United States* (1881-85).

LAWRENCE, WILLIAM (1850-). An American Protestant Episcopal Bishop, grandson of Amos Lawrence and son of Amos A. Lawrence. Born at Brookline, Mass., he graduated at Harvard in 1871 and in 1875 at the Episcopal Theological School, Cambridge. In 1876 he became rector of Grace Church, Lawrence, Mass. He was elected professor of homiletics and pastoral theology in the Episcopal Theological School in 1884, became its dean in 1888, was a university preacher at Harvard from 1888 to 1891, and in 1893 was elected, and in the following year was consecrated, Bishop of Massachusetts to succeed Phillips Brooks. He wrote *Life of Amos A. Lawrence* (1889); *Visions and Service* (1896); *Life of Roger Wolcott, Governor of Massachusetts* (1902); *Study of Phillips Brooks* (1903).

LAWRENCE, WILLIAM BEACH (1800-81). An American jurist and political leader, born in New York City and educated at Columbia College. He studied law and after two years' residence in Europe was admitted to the New York bar in 1823. In 1826-27 he was Secretary of the American Legation in London under Gallatin, served until 1828 as chargé d'affaires, returned to America in 1832, and, having entered into partnership with Hamilton Fish, soon attained distinction in the practice of law. He lectured for a time on political economy at Columbia College and was one of the promoters of the Erie Railroad. He made Rhode Island his permanent home in 1850, became Lieutenant Governor in 1851, acted as Governor in 1852, and was a member of the State Constitutional Convention of 1853. He lectured on international law in Columbian University, Washington, D. C., and became widely known for his interpretation of disputes arising out of the provisions of the Treaty of Washington of 1871. His writings are marked by a broad and liberal interpretation of international relations. Chief among them are: *The Bank of the United States* (1831); *Institutions of the United States* (1832); *Discourses on Political Economy* (1834); *Biographical Memoir of Albert Gallatin* (1843); *The Law of Charitable Uses* (1845); an annotated edition of Wheaton's *Elements of International Law* (1855); *Visitation and Search* (1858); *Commentaire sur les éléments du droit international* (4 vols., 1868-80); *The Treaty of Washington* (1871); *Belligerent and Sovereign Rights as Regards Neutrals during the War of Secession* (1873); *Etudes sur la juridiction consulaire et sur l'extradition* (1880).

LAWRENCEBURG. A city and the county seat of Dearborn Co., Ind., 22 miles by rail west of Cincinnati, Ohio, on the Ohio River, and on the Baltimore and Ohio Southwestern, and the Cleveland, Cincinnati, Chicago, and St. Louis railroads (Map: Indiana, H 6). It has manufactures of coffins, flour, buggies, saws, pumps, furniture, barrels, whisky, beer, and veneers. There is a public library here. Settled in 1802, Lawrenceburg was first incorporated in 1847. The present government is administered by a mayor, chosen every four years, and a unicameral council. The electric-light plant is owned by the municipality. Pop., 1900, 4326; 1910, 3930.

LAWRENCE COLLEGE. A college affiliated with the Methodist Episcopal church and located at Appleton, Wis., chartered in 1846 and named the Lawrence Institute of Wisconsin,

in honor of its principal donor, Hon. Amos A. Lawrence, of Boston. It was opened for students in 1849, when its present name was assumed. In 1914-15 the faculty numbered 44, with a student enrollment of 639, comprising 441 students in the collegiate department and 198 music students. The college confers the degrees of B.A. and of M.A. It has a library of 34,000 volumes. Its productive endowment in 1914 was \$910,000, its income \$89,000, the value of its buildings \$516,000, and the total property under its control was estimated at \$1,439,200. The president in 1914 was Samuel Plantz, Ph.D., D.D.

LAWRENCE SCIENTIFIC SCHOOL. See HARVARD UNIVERSITY.

LAWRENCEVILLE. A city and the county seat of Lawrence Co., Ill., 141 miles east of St. Louis, Mo., on the Baltimore and Ohio Southwestern and the Cleveland, Cincinnati, Chicago, and St. Louis railroads (Map: Illinois, J 8). It is in a rich agricultural and oil country, its chief industry being the refining of crude oil. There are municipally owned water works and an electric-light plant. Pop., 1900, 1300; 1910, 3235.

LAWRENCEVILLE SCHOOL. An endowed preparatory school for boys at Lawrenceville, N. J., incorporated in 1882 on the John C. Green Foundation. The school was founded in 1810. There are five forms. In the last three years electives are allowed. The buildings include 15 masters' houses, an upper house reserved for the graduating class, three recitation buildings, with an auditorium, a library of over 5000 volumes, a hall for the literary societies presented by the alumni in 1913, a chapel, and a gymnasium. The school property includes over 300 acres of ground. The school in 1913-14 had a teaching force of 40 and an enrollment of 400 students.

LAW REPORTS. See REPORT.

LAWS, NAVIGATION. See NAVIGATION LAWS.

LAWS, SANITARY. See SANITARY LAWS.

LAWS, SUMPTUARY. See SUMPTUARY LAWS.

LAWS AND USAGES OF WAR. A code of law governing the conduct of civilized warfare. It has special reference to the treatment of prisoners, noncombatants, spies, traitors, private property, rights of capture, opening of hostilities, occupation and conquest, blockades, rights and obligations of neutrals, Red Cross, etc. Many of the clauses of the code have been approved and agreed to by international conventions, while others have become sanctioned by long usage and the demands of civilization. See WAR; INTERNATIONAL LAW. Consult also *Rules of Land Warfare* (Washington, Government Printing Office, 1914).

LAW SCHOOL. A school, or institution of learning, where students are taught the knowledge of the law. Law schools existed in Rome as early as the beginning of the third century, and more than one of the mediæval universities rested their fame on the excellence of their legal instruction and the large number of students of the law which they drew from all parts of Europe. In the modern world law schools, as independent institutions or as separate "schools" of a university, are a purely American development, legal instruction in England being almost exclusively carried on in the Inns of Court and, in Scotland and on the continent of Europe, by faculties of law in the universities. In the United States law schools have usually originated as independent institutions, gener-

ally under the control and governed by the ideals of the legal profession; but there is a growing tendency to bring them under the influence and control of the universities. As admission to the bar in America does not depend on the systematic instruction of a law school, but upon ability to pass a State or judicial examination, the requisite preparation for the bar has usually been gained through an apprenticeship in a lawyer's office or by private study. Of late years, however, students of the law have flocked in increasing numbers to the law schools, and these have consequently greatly increased in number, size, and importance. See LEGAL EDUCATION.

LAWSON, ANDREW COWPER (1861-). An American seismologist. He was born at Anstruther, Scotland, graduated from the University of Toronto in 1883, and received the degree of Ph.D. from Johns Hopkins in 1888. A geologist on the Geological Survey of Canada from 1882 to 1890, and thereafter professor of mineralogy and geology at the University of California, he attended geological congresses at London (1888), St. Petersburg (1897), and Toronto (1913), served as chairman of the Earthquake Investigating Commission in 1906, and was president of the Seismological Society of America in 1909-10.

LAWSON, CECIL GORDON (1851-82). An English landscape painter, born at Wellington, Shropshire. He studied under his father (a portrait painter) and his brother Wilfrid and first won recognition in 1878 with "The Minister's Garden" (Manchester Gallery). His poor health and early death alone prevented him from becoming one of the greatest English landscape painters. Paintings like "The August Moon" (Tate Gallery), "The Hop Gardens of England," "In the Valley, a Pastoral," "The Storm Cloud," and "In the Wharfedale, Yorkshire" (South Kensington Museum), a water color, reveal a frank independence, exceptional understanding of light and color, and poetic imagination. Lawson also designed book illustrations. Consult E. W. Gosse, *Cecil Lawson: A Memoir* (London, 1883), and Owen, "In Memoriam, Cecil Gordon Lawson," in *Magazine of Art* (ib., 1894).

LAWSON, ERNEST (1873-). An American landscape painter. He was born in Halifax, Nova Scotia, and studied in Kansas City, Mo., and in New York City at the Art Students' League under Twachtman and James Alden Weir. After spending two years in France he returned to America in 1904. His art is impressionistic in the best sense; for he possesses a direct vision, a personal sense of nature, and a power of rendering light and atmosphere which enable him to invest the sombre confusion of great cities and the most commonplace portions of the American countryside with poetry and charm. Lawson was awarded the Sesnan prize at the Pennsylvania Academy in 1907, and the first Hallgarten prize at the National Academy in 1908 for "Ice on the Hudson," which caused his election as associate of the Academy. Among his best paintings are "Near High Bridge," "A Breezy Day," "Early Summer," "The Abandoned Farm" (National Gallery, Washington), "Excavations," "Harlem Flats," "Road down the Palisades" (1911),

"Harlem River" (1911), "Hillside at Inwood" (1912), "Evening, Palisades" (1913).

LAWSON, JOHN (?-1712). An American Colonial official and writer. He made the trip on horseback from Charleston to the settlements on the Neuse in the Northern Colony. On the way he kept a journal describing minutely the country, the settlers, the Indians, animals, and plants. Soon he was made surveyor-general of the Colony and explored much territory before unknown. He published *A New Voyage to Carolina, Containing the Exact Description and Natural History of that Country, together with the Present State Thereof; and a Journal of a Thousand Miles Travel'd thro' Several Nations of Indians, Giving a Particular Account of their Customs, Manners, &c.* (London, 1709). His activity aroused the anger of the Indians, who saw the resulting encroachment on their territory. In 1711, in company with Baron de Graffenried (q.v.), the head of the settlement of German Palatines and Swiss on the lower Neuse, he made a trip up the river and was captured by the Tuscaroras. After a time De Graffenried was freed, but Lawson, who had quarreled with a petty chief, was executed.

LAWSON, THOMAS WILLIAM (1857-). An American banker and speculator, born at Charlestown, Mass., and educated in the public schools of Cambridge. Beginning business as a banker and broker in Boston in 1870, he soon became prominent upon the stock exchanges of the country as a daring speculator, especially in copper properties. Eventually he became senior member of the firm of Lawson, Arnold & Co (members of the Boston and New York Stock Exchanges), and president of the Thomas W. Lawson Company, the Trinity Copper Company, the First National Copper Company, and (1907) the Bay State Gas Company of Delaware. Under the title of "Frenzied Finance" he wrote for *Everybody's Magazine* in 1904-05 a series of widely read articles purporting to expose the iniquities of stock, copper, and oil speculation. A man of great wealth himself, Lawson created a sensation in financial circles, and throughout the country in general, by his attacks on the "system." In 1901 he built a yacht to defend the *America's Cup*, but was excluded from competing by racing officials. His publications include: *The Krank* (1887); *History of the Republic in Part* (1888); *Secrets of Success* (1888); *Collection of Poems and Short Stories* (1888); *Lawson's History of the America's Cup* (1902); *Frenzied Finance* (1905); *Friday the Thirteenth* (1907); *The Remedy* (1912); *High Cost of Living* (1913).

LAWSON, VICTOR FREMONT (1850-). An American newspaper editor and publisher, born in Chicago. He was early a printer. The *Chicago Daily News*, which he bought in 1876, was made a success by Lawson in partnership with Melville E. Stone (q.v.); in 1888 he became sole proprietor. The morning edition of the paper, started in 1881, subsequently became known as the *Chicago Record*. It was merged with the *Times-Herald* under the name of the *Record-Herald* in 1901 and with the *Inter-Ocean* under the name of the *Chicago Herald* in 1914. Lawson was especially active in the support of the movement for a United States Postal Savings Bank, and by means of his *Daily News Fresh Air Fund* he maintained the Lincoln Park Sanitarium. He was at one time president of the Associated Press.

LAWSON, SIR WILFRED, second BARONET (1829-1906). An English legislator and temperance advocate. The son of Sir Wilfrid Lawson, he was born near Carlisle and early came into prominence in connection with his labors in the cause of total abstinence. In 1859 he was elected to Parliament for Carlisle, and in 1864, having identified himself with the radical wing of the Liberal party, he introduced in the House of Commons a bill providing for permissive or local option closing of saloons. In consequence of this measure, which failed to pass, he lost his seat in Parliament in the following year. On his father's death, in 1867, he succeeded to the family title and estates, and in 1868, as a follower of Mr. Gladstone, and especially as a supporter of Irish disestablishment, was returned to Parliament for Carlisle. He represented that city until 1885, in the meantime having the satisfaction of seeing his Local Option Bill, which he had persistently advocated, pass by a majority of 26 votes in 1880, a success repeated in 1881 and 1883. He was defeated by 10 votes in 1885, but in 1886 he was elected by a large majority to represent the Cocker mouth Division of Cumberland in Parliament as a Gladstonian Liberal. He was again returned in 1892 and in 1895, but in 1900 lost his seat by 109 votes. In 1903 and 1906 he was returned for Camborne Division, Wales. During his long public life Lawson was associated with many reform measures having to do with women's rights, Sunday closing, the opium traffic, and the abolition of Church rates. An enthusiastic sportsman, he was long master of the Cumberland foxhounds. With F. C. Gould he published *Cartoons in Rhyme and Line* (1905).

LAWSONIA. See HENNA.

LAWS RELATING TO SEAMEN. See SEAMEN, LAWS RELATING TO.

LAW TERMS. In England and Ireland, those periods of the year during which the law courts sit in banc, or in full court, to dispose of business. These are of ancient origin and are now fixed by statute as follows: Hilary term begins January 11, ends January 31; Easter term begins April 15, ends May 8; Trinity term begins May 22, ends June 12; Michaelmas term begins November 2, ends November 25. In a few instances the ordinary terms of court were so designated in the American Colonies, but the practice never became general and did not survive the Revolution.

LAWTON. A city and the county seat of Comanche Co., Okla., about 90 miles southwest of Oklahoma City, on the St. Louis and San Francisco and the Chicago, Rock Island, and Pacific railroads (Map: Oklahoma, C 4). It contains Fort Sill, a United States military post, the Fort Sill Indian School, the Wichita National Forest and Game Preserve, and Medicine Park, a summer resort. Farming, cotton raising, and the manufacture of cottonseed oil constitute the chief industries, an extensive irrigation project being carried on in the vicinity by the government. Lawton owns its water works. Pop., 1900, 5562; 1910, 7788.

LAWTON, HENRY WARE (1843-99). An American soldier, born at Manhattan, now a part of Toledo, Ohio. He served with distinction in the Union army during the Civil War, rising from the rank of sergeant to that of brevet colonel of volunteers (1865). On the recommendations of Generals Sherman and

Sheridan he was commissioned as second lieutenant in the Forty-first Infantry in 1866. Thereafter he saw much active service in fighting Indians, especially in Arizona, and became lieutenant colonel in 1889. In June, 1898, he accompanied the American army which invaded Cuba; the Second Division of the Fifth Army Corps, of which he was in command, took El Caney. His efficiency in this position won for him promotion to the rank of colonel in the regular army and brigadier general of volunteers. After the fall of Santiago he was appointed commander of the district and made major general. In December, 1898, General Lawton, ordered to the Philippines as second in command to General Otis, took command of the First Division of the Eighth Army Corps. In the Islands he was almost constantly in active service until the time of his death, Dec. 19, 1899, when he was killed in an attack upon intrenched Filipinos at San Mateo, Luzon. He had gained a reputation for great courage and skill.

LAWTON, WILLIAM CRANSTON (1853-). An American author and educator, born at New Bedford, Mass. He graduated from Harvard in 1873; studied at Berlin in 1882-83, the year before having been a member of the Assos expedition; from 1895 to 1907 was professor of Greek language and literature in Adelphi College, Brooklyn; and then for four years was owner and principal of the School of the Lackawanna at Scranton, Pa. Thereafter he was engaged in literary work and lecturing. His writings include: *Three Dramas of Euripides* (1889); *Art and Humanity in Homer* (1896); *New England Poets* (1898); *Successors of Homer* (1898), a volume of poems, *Folia Dispersa* (1895); histories of Greek and Latin literature (1903); *Ideals in Greek Literature* (1905). He was classical editor of, and the leading classical contributor to, Warner's *Library of the World's Best Literature*.

LAWYER. A generic term applicable to all persons who have made a special study of the law and who are entitled to the privilege of advising clients and of representing them in legal proceedings. In primitive society the lawyer, who may also be the lawgiver or lawfinder, is usually the priest, the repository of both the divine and the customary law. In all stages of human society he has exercised an important and usually a determining influence on legal development. As human society grows in complexity and the law regulating social relations more extensive and complicated, the expert, learned in the law, becomes a more and more important instrumentality in the administration of justice. The term lawyer includes advocate, attorney, counselor, barrister, proctor, solicitor (qq.v.), and even the judicial officers who collectively make up the bench and bar.

At Rome the era of civil lawyers begins about three hundred years before Christ with Coruncanus, the first plebeian *pontifex maximus*. From his time *prudentes*, persons learned in the law of the state, were a recognized class, acting as professional counsel and public expositors of legal principles. In some respects their work and influence differed widely from those of the modern lawyer. In the first place, they were called on by the magistrates for opinions in litigated cases. Oftentimes these magistrates, such as prætors and curule ædiles, had no legal learning and hence were forced to seek advice from others. But it was also customary for those

who had enjoyed a legal training and experience to call in the assistance of other *prudentes*. In this way it happened that the Roman lawyer exercised an influence over judicial decisions which has never belonged to the English or American bar. See CIVIL LAW; JURISCONSULT.

The first official recognition of lawyers as a professional class in England appears in the reign of Edward I, when the Statute of Westminster I declares the penalty for certain misconduct by "serjeant-counters." Its evolution had undoubtedly been slow, but the statute just referred to is evidence that "serjeant-advocates" had gained a foothold in English courts prior to 1275. Apparently the King was the first to employ professional counsel, for their earliest title is serjeants or servants of the King. Having asserted this privilege for himself, he conceded it to others. For a time private litigants are forced to obtain a special license from the King as a condition of employing counsel to appear for them in court. Later the King licenses the counsel, and litigants are free to employ any of such favored practitioners of the law. The bar now becomes an integral part of the judicial system, having rights, duties, and functions as distinct and almost as important as those of the bench. From this time on, the opinion of the legal profession "is among the most powerful of the forces that shape the law."

According to the census of 1910, the professional lawyers including judges and justices of the United States numbered 114,704, thus constituting one in every seven hundred and eighty-five of the male population. Two-thirds of the Presidents have been lawyers. A like proportion has obtained among United States Senators, while more than half of the Representatives in Congress, as well as of State legislators, have been members of the legal profession. Consult: James Muirhead, *Historical Introduction to the Private Law of Rome* (2d ed., London, 1899); Pollock and Maitland, *History of English Law before the Time of Edward I* (2d ed., 2 vols., Cambridge, 1903); Sir H. J. Maine, *Ancient Law: Its Connection with the Early History of Society and its Relation to Modern Ideas* (4th American ed. from 10th London ed., New York, 1906); Charles Warren, *History of the American Bar, Colonial and Federal, to the Year 1860* (Boston, 1911); J. A. Willard, *Half a Century with Judges and Lawyers* (ib., 1895).

LAWYER. A local name in the middle parts of the United States for (1) the bowfin (*q.v.*) and (2) the gray snapper (*Neomenis*). The burbot is sometimes called lake lawyer.

LAXATIVE (from Lat. *laxativus*, loosening, from *laxare*, to loosen, from *laxus*, loose). A medicine which simply unloads the bowels and is not able to cause active purgation, even if given in large doses. Purgatives are stronger, purging actively, while not capable of acting as poisons, even when used in large amount. There are two qualities by virtue of which food is laxative. The principal one is bulk. All aliment which contains a large amount of innutritious material affords a large residuum. It therefore distends the intestines and stimulates the onward propulsion of the intestinal contents. Articles of diet which are very largely assimilable and afford but little residuum are constipating. Flesh-eating carnivora are habitually constipated, while herbivora are the oppo-

site. While cracked wheat is a laxative, fine wheat flour, from which the wheat husk, constituting bran, has been removed, favors costiveness. Unbolted flour, Indian meal, and oatmeal are laxative. Molasses, brown sugar, ripe fruits, especially those of the citrus family, as well as prunes, figs, tamarinds, etc., are among the substances having decided laxative qualities. Cassia fistula, manna, magnesia, and sulphur are the drugs usually included under the subdivision laxatives of the cathartic group. Many of the older laxatives are now being aban-

... in the treatment of chronic ... : several newer remedies substituted. Among the latter may be mentioned phenolphthalein, a mild, nongripping laxative in small doses. It is often incorporated in agar agar (*q.v.*), also a laxative, which acts mainly by increasing the bulk of the intestinal contents and so stimulating peristalsis. Another laxative, which acts in a purely mechanical manner, is liquid paraffin, known also as liquid vaseline, liquid albolene (*q.v.*), Russian mineral oil, and under many proprietary names. Liquid paraffin has come into extensive use since it was first advocated, by Sir Arbuthnot Lane, for chronic intestinal stasis with auto-intoxication. The substance passes unchanged through the alimentary canal and merely softens and increases the bulk of its contents. It is also thought to have a slight inhibitory effect on some varieties of intestinal bacteria, but this has not been demonstrated. Laxatives which stimulate the bile production or supplement its deficiency are sodium glycocholate and sodium taurocholate. These are given largely in place of the older preparations of ox gall. They hold lecithin and cholesterin in solution in the bile, help to carry fats and soaps into the villi of the intestine, and are then absorbed in the capillaries and return to the liver by way of the portal vein. See CATHARTIC; PURGATIVE.

LAXENBURG, lăk'sen-bŭrk. A village of Lower Austria, 9 miles south of Vienna, on the Schwechat River. Pop., about 1000. It is noted for its handsome Imperial park and gardens, in which are the old castle (founded in 1377), the new castle (begun in 1600), and the Franzensburg in a mediæval style of architecture, built on an islet in the lake, between 1799 and 1836, and containing fine art collections.

LAY, BENJAMIN (1681-1759). A British-American philanthropist and one of the earliest opponents of slavery, born of Quaker parentage at Colchester, England. At the age of 18 he became a sailor, but subsequently, after his marriage in 1710, lived for a time at Colchester. In 1718 he settled as a merchant in the island of Barbados, where he soon became convinced of the great iniquity of slavery. His agitation against the system rendered him so unpopular that he left the island in 1734 and went to Philadelphia. There he continued to oppose slavery and lost no opportunity to give expression, often by extravagant methods, to his abhorrence of it. Failing to get a sympathetic hearing in Philadelphia, he left that city in anger and disgust and for several years lived in a forest cave, subsisting on vegetables. He wrote a number of tracts, one of which, *All Slave-Keepers, that Keep the Innocent in Bondage, Apostates* (1737), was published by Benjamin Franklin. Lay lived to see a great change in the attitude of the Friends towards the question of slavery, and it was partly owing to

his efforts that the society ultimately resolved to disown all members who persisted in holding slaves. Lay was also a reformer along other lines. In 1737 he proposed humane improvements in the cruel criminal code of the time, and he opposed also the use of tobacco, tea, and animal food. He died at Abington, Pa., and was buried in the Friends' burial ground. Memoirs of him were published by Vaux and Francis. Consult also Bowden, *The History of the Society of Friends in America* (London, 1850), and Turner, *The Quakers* (ib., 1889).

LAY, HENRY CHAMPLIN (1823-85). An American Protestant Episcopal bishop. He was born at Richmond, Va., graduated at the University of Virginia in 1842, and subsequently at the Theological Seminary at Alexandria. Ordained deacon in 1846, he was minister at the church of the Nativity, Huntsville, Ala., from 1847 to 1858, was consecrated Missionary Bishop of the Southwest in 1859, and was transferred to the diocese of Easton (Md.) in 1869. He wrote *Studies in the Church* (1872) and *The Church and the Nation* (1885).

LAY, JOHN LOUIS (1832-99). An American inventor, born in Buffalo, N. Y. He secured an appointment as second assistant engineer in the navy in July, 1862, and in 1864 invented the torpedo with which Lieutenant Cushing (q.v.) destroyed the Confederate ram *Albemarle*. After the evacuation of Richmond by the Confederate forces he was employed in clearing the James River of obstructions which impeded the advance of Admiral Porter's fleet. On the close of the war he resigned from the service and went to South America, where the government of Peru engaged him to mine the harbor of Callao as a defense against an expected attack by the Spanish fleet. He returned to the United States in 1867 and soon after perfected the Lay dirigible submarine torpedo, which he sold to the United States government.

LAYA, là'yá', JEAN LOUIS (1761-1833). A French dramatist, born in Paris. He was at first influenced by revolutionary ideas, but became disgusted at the Jacobin success. In 1793 he wrote *L'Ami des lois*. This was censured by the commune and the author imprisoned. Freed shortly afterward, he accompanied the Duke of Larochehoucauld to Saxony. Upon returning to France he taught in several colleges and then became connected with the Faculty of Letters in Paris. In 1816 he was elected to the French Academy. Laya cannot be regarded as a great writer. His claim to remembrance rests mostly upon the example of civic courage he presented in writing *L'Ami des lois*. He published also *Nouveau Narcisse* (1786), in collaboration with Lyonné; *Les dangers de l'opinion* (1790); *Jean Calas* (1791); *Les deux Stuarts* (1797); *Falkland* (1798); *Une journée du jeune Néron* (1799); and letters.

LAYAMON, là'yá-mon (fl.1200). The author of the *Brut*, a metrical chronicle of Britain. All that is known of him is told in the opening lines of his poem. He was a priest dwelling at Ernley on the Severn (Arley Regis in North Worcestershire). It came to his mind, he says, to relate the noble deeds of the English; and to this end he traveled about to procure noble books. The book he made most use of was the *Roman de Brut* (1155), by an Anglo-Norman poet named Wace. Wace's poem in turn was derived largely from Geoffrey of Monmouth's

History of the British Kings, written in Latin prose (about 1139). But in his wanderings Layamon gathered other traditions which he turned to good account. His poem derives its name from Brut, or Brutus, a great-grandson of Æneas. After the fall of Troy many of the Trojans, it was believed, were taken to Greece, where their descendants were living as slaves. They are freed by Brut and conducted to Albion. From this point Layamon relates the history of Britain down to the death of Cadwalader, who, according to tradition, was the last of the Celtic kings. He mentions Cymbeline and tells the story of Lear and his unkind daughters, and a large section of his poem is devoted to the deeds of Arthur. The *Brut* is of great philological interest. It exists in two manuscripts which are assigned respectively to about 1200 and 1250. The older and better manuscript contains 32,243 short lines. The verse is at times alliterative, as in Old English or Anglo-Saxon; and again assonance or rhyme is employed in imitation of the French. There occur, however, not more than 100 words of French origin—a fact to which attention has often been called to show that in Layamon's time the French and English tongues had hardly begun to intermingle. The two manuscripts were edited with translation by Frederick Madden for the Society of Antiquaries (3 vols., London, 1847). Consult also Ten Brink, *Early English Literature*, vol. i (trans., New York, 1883), and the *Brut*, part 1 (ed. by F. Brie, Oxford, 1906). See GEOFFREY OF MONMOUTH.

LAYARD, SIR AUSTEN HENRY (1817-94). An English traveler, archaeologist and diplomatist. He was born in Paris of English parents and spent several years of his youth with his father at Florence in Italy. He began the study of law, but before finishing set out on a course of Eastern travel, visited several districts of Asiatic Turkey, and acquired a love for Oriental studies, which he never lost. In 1842 he paid a second visit to Mosul, where the French Consul, P. Botta (q.v.), was conducting excavations on the site of the ancient Nineveh. Layard, several years before Botta, had recognized the importance of these ruins and formed the determination to continue the examination of the site of the ancient city. In 1845 he was able to begin his excavations, being liberally assisted by Lord Stratford de Redcliffe, then British Ambassador at Constantinople. In 1848 he received a generous subvention to carry on the work under the auspices of the British Museum. His excavations were successful to a remarkable degree. He sent to the British Museum a mass of sculptures and inscriptions and discovered among other remains the library of King Assurbanipal. (See ASSYRIA.) The results of his labors were embodied in his works, *Nineveh and its Remains* (1848) and *Nineveh and Babylon* (1853). In 1852 Layard became member of Parliament for Aylesbury and was for a short time Undersecretary of State for Foreign Affairs under Lord John Russell. In 1855-56 he served as lord rector of Aberdeen University. In 1860 he was elected to Parliament from Southwark. From 1861 to 1866 he was again Undersecretary of State for Foreign Affairs. He was appointed Chief Commissioner of Works and Privy Councillor in 1868 and in 1869 went as British Ambassador to Spain. In 1877 he was sent as Ambassador to Constantinople, where he remained until 1880. He was honored

with the Order of the Bath in 1878 and in 1890 became a foreign member of the Institute of France. He died in London, July 5, 1894. Besides the works mentioned above, Layard published: *Monuments of Nineveh* (1st series, 100 plates, 1849; 2d series, 71 plates, 1853), *Inscriptions in the Cuneiform Character from the Assyrian Monuments* (98 plates, 1851); *Early Adventures in Persia, Susiana, and Babylonia* (2 vols., 1887; 2d ed., abridged, 1 vol., 1894); and several works on art. Consult the *Autobiography*, edited by W. N. Bruce (2 vols., New York, 1903). See ASSYRIA; NINEVEH.

LAYBACH, li'băg. A city of Austria. See LAIBACH.

LAYCOCK, THOMAS (1812-76). An English physician. He was born in Wetherby, Yorkshire; was educated at University College, London; studied for the medical profession in Paris and in Göttingen. He became known as a specialist in brain and nervous disorders by a number of learned treatises and contributions to the leading medical societies and journals, and in 1855 succeeded Dr. Alison as professor of the practice of physic and clinical medicine in Edinburgh University. In 1861 he was elected a fellow of the Royal Society of Edinburgh and in 1869 was appointed physician in ordinary to the Queen in Scotland. Of his numerous writings, the more important are: *A Treatise on the Nervous Diseases of Women, Comprising an Inquiry into the Nature, Causes, and Treatment of Spinal and Hysterical Disorders* (1840); *Principles and Methods of Medical Observation and Research* (1856); *The Social and Political Relations of Drunkenness* (1856); *Mind and Brain, or the Correlations of Consciousness and Organization with their Applications to Philosophy, Psychology, Mental Pathology, and the Practice of Medicine* (2 vols., 1859). In the last, his most important work, the fundamental principles of the unconscious action of the brain and the theory of evolutionary development of nerve centres were first promulgated. He also translated and edited Unger's *Principles of Physiology* (1851) and Prochaska's *Dissertation on the Functions of the Nervous System* (1851).

LAY DAYS. In maritime law, the number of days granted in the charter party to the charterer or freighter of a vessel within which to load or unload. Within the lay days no charge for wharfage is made, but after their expiration a sum, usually stated in the charter party, is charged and called demurrage. Lay days begin upon the arrival of the vessel at the usual place for discharging cargo. Sundays are counted in reckoning lay days, unless otherwise provided in the charter party. See DEMURRAGE; MARITIME LAW.

LAYERING, ābū'atshun. An artificial method of plant reproduction somewhat resembling the stolon in nature. A layer is an unsevered branch or stem surrounded by a medium such as soil or moss in which it may strike root. The branch may be bent down and a portion of it buried in the soil, or the branch may be mounded with soil. Generally a wound is made to hasten the process of rooting, but with most plants this is not essential. Some plants require only a few days, others even two years. Layering is a favorite method of multiplying woody plants, such as quince and gooseberry, which do not give satisfactory results with cuttings.

LAYING ON OF HANDS. See HAND, IMPOSITION OF.

LAYNEZ, li'năth, or **LAINEZ**, DIEGO (1512-65). Second general of the Order of Jesuits. He was born at Almazan, Castile, in 1512, educated at the University of Alcalá, visited Paris in 1533, and became an ardent follower of Loyola. He accompanied the latter to Rome, where Pope Paul III appointed him a professor in the College of the Sapienza (1537). Loyola died in 1556, and Laynez was elected general of the Order of the Jesuits in 1558. Offered a cardinal's hat, he refused it, preferring to devote his life to the service of the new order. He represented it in the Council of Trent and was one of the most influential in the formation of its decrees. He laid the foundation at Venice of a college of Jesuits and placed special stress on the importance of education which should influence the minds of the young for the good of the Church. He died in Rome, Jan. 19, 1565. He published little, and his manuscripts are almost illegible. His speeches at the Council of Trent and selections from other writings have been edited by Grisat (2 vols., Innsbruck, 1886). Consult Boers, *Vie du Père Jacques Laynez* (Lille, 1894); Bernhard Duhr, *Geschichte der Jesuiten in den Ländern deutscher Zunge* (2 vols., Freiburg, 1907-13).

LAY OF THE LAST MINSTREL, THE. A narrative poem by Sir Walter Scott (1805).

LAY READER. In the Anglican communion, a layman who is licensed by the Bishop to read morning and evening prayer (with the exception of the absolution), officiate at funerals, and read the sermons of approved divines. The first reformed ordinal prepared under Edward VI contains an office for the admission of readers, and in the following year (1560) five of them were "ordained" in London. It seems to have been the intention of the reformers to preserve the ancient minor order of readers (q.v.), but the office became extinct in the eighteenth century. The last diocese in which lay readers were licensed was that of Sodor and Man, under Bishop Wilson (died 1775). The office was revived by Convocation in 1866, and revised regulations were issued in 1905; now a large number are commissioned in England and in the Episcopal church in America, where a canon passed in 1871 regulates the exercise of their office. Consult: S. F. Hotchkiss, *Importance and Usefulness of Lay Reading* (1892); H. B. Restarick, *Lay Readers* (New York, 1894); *Lay Reader: A Magazine for Church Workers* (London, annually).

LAYS OF ANCIENT ROME, THE. Classical ballads, by Thomas Babington Macaulay (1842). They are four in number, of which "Horatius" is best known.

LAYTHROP, JOHN. See LATHROP, JOHN.

LAZARILLO DE TORMES, li-thă-rē'lyô dă tōr'măs. The first picaresque novel produced in Spain and parent of the entire picaresque literary movement in modern Europe. We know neither the author nor the date and place of the first appearance of the work. It appeared anonymously; and no author's name was accredited to it until 1605, when the Hieronymite monk José de Sigüenza named as its author Fray Juan de Ortega. Two years later (1607) it was accredited by the Belgian Valère André to Diego Hurtado de Mendoza. In 1608 André Schott repeated this assertion, although less categorically. Despite these facts the assigna-

ment of the work to Hurtado de Mendoza was generally accepted, until Morel-Fatio, in 1888, demonstrated the untenability of that position. The earliest-known editions are the three of Alcalá de Henares, Antwerp, and Burgos, all of which appeared in 1554. The story is the scintillating autobiography, in purest Castilian, of a rogue who served many masters, one after another, beginning with a blind beggar, and ending as town crier for Toledo; and in the series of pictures that the author draws for us with a master hand, we see much of the social life and cultural conditions of Spain during that period. And this is true despite our finding certain stories that are mere remodelings of stories to be found in earlier and other literatures. Two continuations (or second parts) appeared—one, anonymously, in 1555, and the other (which is the better one), accredited to H. Luna, in 1620.

Bibliography. *La vida de Lazarillo de Tormes*, edition in the *Biblioteca de autores españoles*, vol. iii (Madrid, 1850), where it is attributed to Hurtado de Mendoza; edition by H. Butler Clarke (London, 1897); edition by R. Foulché-Delbos, restitution of the princeps, *Bibliotheca Hispanica*, vol. iii (Madrid, 1900); Stahr, "Mendoza's Lazarillo de Tormes," in the *Deutsche Jahrbücher für Politik und Literatur* (Berlin, 1862); W. Lauser, *Der erste Schelmenroman: Lazarillo von Tormes* (Stuttgart, 1889); A. Schultheiss, *Der Schelmenroman der Spanier und seine Nachbildungen* (Hamburg, 1893); A. Morel-Fatio, *Études sur l'Espagne* (1st series, 1st ed., Paris, 1888; 2d ed., revised and enlarged, ib., 1895); F. W. Chandler, *Romances of Roguery: Part I. The Picaresque Novel in Spain* (New York, 1899); Raymond Foulché-Delbos, "Remarques sur Lazarillo de Tormes," in *Revue Hispanique*, vol. vii (Paris, 1900); Fonger De Haan, *An Outline of the History of the Novela Picaresca in Spain* (New York, 1903); Adolfo Bonilla y San Martín, "Una imitación de Lazarillo de Tormes en el siglo XVII," in *Revue Hispanique*, vol. xv (Paris, 1906); F. W. Chandler, *Literature of Roguery* (2 vols., Boston, 1907); *Life of Lazarillo de Tormes*, translated from the edition of 1558 by Sir Clements Markham (London, 1908); H. Rausse, *Zur Geschichte des spanischen Schelmenromans in Deutschland* (Münster-in-Westfalen, 1908); *Le garçon et l'aveugle: jeu du XVIIIe siècle*, edition of Mario Roques (Paris, 1912).

LAZARISTS, or CONGREGATION OF THE MISSION OF VINCENTIANS. An order of missionary priests in the Roman Catholic church, founded by St. Vincent de Paul. In 1617, being for a time in the country, in Picardy, he found great need for religious instruction to exist among the peasants and gathered several priests around him to forward this work. As it grew, Adrien Le Bon, prior of St. Lazaire, offered his priory for their use; they took possession of the house in 1632 and got the name of Lazarists from it. The institution was officially approved by the founder's patron, François de Gondi, Archbishop of Paris, in 1626 and by Pope Urban VIII in 1632. As their primary object was to instruct and edify the peasants, it was stipulated in the original deed of endowment that they should "neither preach nor administer any sacrament in towns which are the seat of bishops, archbishops, or courts of justice, except in cases of extreme necessity." Besides their special work they sought to reform the clergy by means of con-

ferences and the establishment of seminaries. St. Vincent prudently gave his rule no final shape until after many years of experience, in 1658. In his own lifetime missionaries had been sent to Italy in 1638, Tunis in 1643, Algiers, Ireland, and the Hebrides in 1646, and Madagascar in 1648; and at his death, in 1660, the congregation numbered 500 members. The first house in Spain was founded by a colony from Rome in 1704; the Spanish Lazarists kept persistently at their work, in spite of difficulties with liberal and revolutionary governments, and now possess 16 houses. The French congregation also suffered severely from the Revolution, but was restored in 1804, receiving 15,000 francs from the public exchequer and a hospital in Paris. Napoleon, however, abolished them once more in 1809 and confiscated their property, which was restored by Louis XVIII in 1816; they subsequently possessed 56 houses in France. They were invited to Germany in 1781 by the Elector Palatine Charles Theodore, who intrusted to them some institutions which had been conducted by the Jesuits before their suppression. They began work in Prussia in 1850 and had already eight houses when they were driven out by the Kulturkampf of 1873. They maintained a mission in Madagascar from 1648 to 1825. In China they have had a long and notable career from 1697 to the present day, and several of them have filled the office of Vicar Apostolic. They have missions in Algiers, Egypt, Turkey, Persia, and other countries. The first Lazarist to work in North America came here in 1816 under the leadership of Dubourg, the future Bishop of New Orleans; the order in the United States is now divided into two provinces, with over a dozen houses and more than 200 priests. The total number of Lazarists in all parts of the world is over 32,000. See VINCENT DE PAUL, SAINT, and consult the works mentioned there. Consult also: *Annals de la congrégation de la mission* (55 vols., Paris, 1834 to the present; an Eng. ed., 1894 et seq.); *Mémoires de la congrégation de la mission* (9 vols., ib., 1863); *Recueil des principales circulaires des supérieurs généraux de la congrégation de la mission* (9 vols., ib., 1863); L. V. de Bougaud, *Histoire de Saint Vincent de Paul, fondateur de la congrégation des prêtres de la Madagascar au 17e siècle* (ib., 1903). A complete bibliography is in the *Annals*, No. 40 (Emmitsburg, Md., 1903).

LAZARUS (Gk. *Adāpos*, *Lazaros*, the Græcized form of the Rabbinic *L'āzār*, a shortened form of the Heb. *El'āzār*, God has helped). 1. The name given by Jesus to the beggar in the parable (Luke xvi. 19-31). This is the only instance in which Jesus has named a character in His parables. The conclusion that it has been introduced by a later hand, in order to connect the individual with the Lazarus of Bethany, is not as probable as that, some name being necessitated by the situation of verse 24, it was used by Jesus himself, being selected because of its meaning. The unsupported idea that he was a leper has given rise to the terms "lazar," a leper, "lazar house" (lazaretto), a pesthouse. 2. The brother of Martha and Mary (q.v.) and a beloved friend of Jesus. He is named only in John xi and xii. The literal truth of the story of the resurrection of Lazarus there given has been seriously questioned in many quarters. A number of attempts have been made to explain it so as to preserve its

lofty teaching and at the same time eliminate the miracle. The name Lazarus is apparently preserved in *El-Azariyeh*, a village southeast of the Mount of Olives, about $1\frac{1}{4}$ miles from Jerusalem, which is generally identified with the ancient Bethany. Consult the lives of Christ by Strauss, Renan, Weiss, Edersheim, O. Holtzmann, and Rhee for various views. For the prominent place given to the resurrection of Lazarus in early Christian art, consult Smith and Cheetham, *Dictionary of Christian Antiquities*, vol. i (London, 1875-80), and C. D. Lambertson, *Themes from St. John's Gospel in Early Roman Catacomb Painting* (Princeton, N. J., 1911).

LAZARUS, EMMA (1849-87). An American Jewish poetess and philanthropist, born in New York City and privately educated. She was attracted in youth to poetry and published a volume of poems and translations at the age of 18. *Admetus and Other Poems* followed in 1871 and showed ripening talent, but her first mature work is *Alide*, a prose romance, based on an episode in Goethe's life (1874). *The Spagnoletto*, a tragedy (1876), was much praised. *Poems and Ballads of Heine* followed in 1881 and her original poems, *Songs of a Semite*, in 1882. When the Jews, expelled in great numbers from Russia, began to appear in destitute multitudes in New York in the winter of 1882, Miss Lazarus interested herself actively in providing technical education to make them self-supporting. She wrote also: *In Exile* (1882); *The Crowing of the Red Cock*; *The Banner of the Jew* (1882). A collection of *Poems in Prose* (1887) was her last book. Several of her translations from mediæval Hebrew writers have found a place in the ritual of American synagogues. Her *Complete Poems* with a *Memoir* appeared in 1888 at Boston.

LAZARUS, LA'TSÁ-RUS, MORITZ (1824-1903). A German philosopher and psychologist. He was born at Filehne in Posen, of Jewish parents, and studied law and philosophy in Berlin. In 1850 he became prominently connected with philosophical thought by Steinthal the *Zeitschrift für Vergleichende Sprachwissenschaft* and became a leader in the modern Herbartian school. In 1860 he was chosen professor at Bern, in 1868 he became teacher of philosophy at the Berlin Military Academy, and in 1873 was made professor at the University of Berlin. Lazarus' fundamental principle was that truth must be sought by psychological methods directed rather towards society as a whole than towards individuals. His more important works are *Das Leben der Seele* (2 vols., 1856-57; 3d ed., 1883-97); *Zur Lehre von den Sinnestauschungen* (1867); *Ueber den Ursprung der Sitten* (2d ed., 1867); *Ueber die Ideen in der Geschichte* (2d ed., 1872); *Was heisst nationale* (1880); *Erziehung und Geschichte* (1881); *Unser Standpunkt* (1881); *Ueber die Reize des Spiels* (1883); *Ideale Fragen* (3d ed., 1885). *Der Prophet Jeremias* (1894). *Die Ethik des Judentums* (1898; new ed., 1911); *Die Erneuerung des Judentums* (1909). *Moritz Lazarus' Lebens-erinnerungen*, completed by N. Lazarus and A. Leicht, appeared in 1906.

LAZES, LA'ZĒZ. A branch of the Mingrelian section of the Georgian (q.v.) stock, dwelling in the Caucasus in the Batum-Trebizond region, chiefly in Turkish territory. By some they are considered to be the descendants of the ancient

Colchians. The Lazian language, which is spoken in several dialects, was studied by Rosen, who published an essay, *Ueber die Sprache der Lazen* (Berlin, 1843).

LAZETCHNIKOV, LA-ZĒCH'NYĒ-KÓF, IVAN IVANOVITCH (1794-1869). A Russian novelist and dramatist. His first success was his sketch of military life published after his retirement from the army in 1819. His dramas did not meet with the success gained by his historical novels, among which the most important are: *Posledni Novik* (1833); *Ledianyi Dom*, translated into German with the title *Eispalast* (1835); *Basurman* (1838). His complete works were published at St. Petersburg in 1858.

LAZULI BUNTING (so called from its blue color), or **LAZULI FINCH**. A small finch (*Cyanospiza*, or *Passerina, amoena*) of the western United States, where it replaces the indigo bunting (q.v.) of the East, which it closely resembles in habits and song. It is frequently kept as a cage bird. The male has the head and upper parts a deep turquoise blue, with two white bars upon the wings, the breast is yellowish tawny, the abdomen white. The female is grayish brown.

LAZULITE (from *lazuli*). An aluminium phosphate with iron and magnesium hydroxides that crystallizes in the monoclinic system. It is of an azure-blue color, resembling lapis lazuli, with which it has been frequently confounded. This mineral is found both massive and crystallized in Styria, Switzerland, Sweden, and Brazil, and in the United States in Gaston Co., N. C., and in Lincoln Co., Ga.

LAZURITE. See LAPIS LAZULI.

LAZZARONI, LA'DZÁ-RÓ-NÉ (It, beggars). The name by which the lowest class of the population, that spends most of its time in idling or begging, is designated in Naples. They became prominent during the Revolutionary and Napoleonic era, when, as supporters of the Bourbons, they attacked with great ruthlessness the wealthy middle class and liberal nobility.

LEA, HENRY CHARLES (1825-1909). An American ecclesiastical historian, son of Isaac Lea, grandson of Mathew Carey, and named for his uncle, Henry Charles Carey (q.v.). His brother, Mathew Carey Lea (1823-98), was known as a chemist, and made especially important contributions to photographic chemistry. H. C. Lea was born in Philadelphia, was educated privately, and at 18 became identified with his father's publishing business. Ill health forced his retirement in 1880, but he acquired large real estate interests and became a millionaire. For many years he was active in municipal reform, and during the critical period of the Civil War he did much to promote the organization of volunteers in Philadelphia. Lea had taken up the study of the mediæval church as an avocation, but in later years, while he continued his interest in various activities, he devoted himself increasingly to work which eventually placed him in the front rank of modern historians. He used his wealth to employ expert copyists, who duplicated for him documents, especially such as dealt with the Inquisition in Spain and the Spanish dependencies—his great field of work. His collection of books and manuscripts, the finest of its kind in existence, he bequeathed to the University of Pennsylvania. Lea was a member of the American Academy of Arts and Letters and a fellow of the British Academy; in 1909 served as presi-

dent of the American Historical Association; received honorary degrees from Harvard, Princeton, Pennsylvania, and Giessen; and was made a fellow of the Imperial University of Moscow. His works include: *Superstition and Force* (1866; 4th ed., rev., 1892); *A History of Sacerdotal Celibacy in the Christian Church* (1867; 3d ed., 2 vols., 1907); *A History of the Inquisition of the Middle Ages* (1888; new ed., 3 vols., 1906; Fr. trans. by Solomon Reinach, 1899; Ger. trans., 1905-06); *A History of Auricular Confession and Indulgences in the Latin Church* (3 vols., 1896); *The Moriscos of Spain* (1901); *History of the Inquisition of Spain* (4 vols., 1906-07); *The Inquisition in the Spanish Dependencies* (1908). Consult P. M. Baumgarten, *Henry Charles Lea's Historical Writings* (New York, 1909); E. P. Cheyney, "On the Life and Works of Henry Charles Lea," in *American Philosophical Society Proceedings* (Philadelphia, Jan.-Apr., 1911).

LEA, HOMER (1876-1912). An American soldier and writer, born in Denver. In spite of a deformity of the spine he obtained a good education, studying at Occidental College, at the University of the Pacific, and at Stanford. Interested in military science, he told his friends that he would become a general in the Chinese army. He first attracted attention by championing the cause of the Chinese in 1900 and by attempting the relief of Emperor Kwang-sü (q.v.) in 1901. In 1904 he became lieutenant general in the new Chinese army, traveled with the Chinese reformer K'ang Yu-wei (q.v.) in 1905, and was associated with Dr. Sun Yat-sen (q.v.) in the early stages of the Chinese revolution of 1911-12. He gained international prominence by his book *The Valor of Ignorance* (2 vols., 1909), in which he attempted to show how the Japanese could successfully invade the United States. He wrote also a novel *The Vermillion Pencil* (1908), a drama *The Crimson Spider* (1909), and *The Day of the Saxon* (1912).

LEA, ISAAC (1792-1886). An American conchologist, born at Wilmington, Del. He was a business man, a partner of a large publishing house in Philadelphia, who devoted his leisure to the collection and study of objects of natural history. He was especially interested in freshwater and land mollusks and during 50 years continued to make contributions to the transactions of the scientific societies of Philadelphia concerning these animals. He was president of the American Association for the Advancement of Science in 1860. His most important writings are: *Observations on the Genus Unio* (13 vols., 1827-74); *Contributions to Geology* (1833); *Synopsis of the Family of Naiades* (1838); *Fossil Footmarks in the Red Sandstones of Pottsville* (1852). G. W. Tryon, Jr., published a full account of Lea's conchological work in Philadelphia in 1861. His immense collection of Unionids and his other collections are deposited in the National Museum at Washington. Consult N. P. Scudder, "Published Writings of Isaac Lea," in *United States National Museum, Bulletin No. 23* (Washington, 1885).

LEA, LUKE (1879-). An American legislator and journalist, born at Nashville, Tenn. He graduated from the University of the South (A.B., 1899; A.M., 1900) and from Columbia Law School in 1903. He began practice in his native city, and, being a capable lawyer and a member of a distinguished Tennessee fam-

ily, he was successful. His prominence was secured in journalism rather than the law, however. In 1905 he became the editor and publisher of the Nashville *Tennessean*, with which, in 1913, he joined the Nashville *Democrat*. In politics he was the ardent supporter of Senator Carmack and the opponent of Governor Patterson. When Carmack was killed by the Coopers, he was then and during the subsequent sensational trial caustic in his criticism of father and son. He was a leader in the revolt of the Fusion Democrats against the Patterson administration and candidacy for renomination. In 1911, after prolonged balloting, Lea was elected United States Senator by the Legislature to succeed Senator Frazier. As a Senator, Lea acted with the regular Democrats and, although extremely young, was regarded as very able. He introduced the resolution providing for the second investigation of the election of Senator Lorimer. He was also an enthusiastic and consistent supporter of President Wilson.

LEA, MATHEW CAREY (1823-97). An American chemist, born in Philadelphia. He devoted himself chiefly to the chemistry of photography, to which he made a number of important contributions. His publications include numerous papers on the chemical action of light and an excellent *Manual of Photography* (2d ed., 1871).

LEACH, ARTHUR FRANCIS (1851-). An English educational historian, born in London and educated at Winchester and at New College, Oxford, where he graduated in 1873. Until 1881 he was fellow of All Souls College, also being called to the bar in 1874. In 1882 he became Assistant Charity Commissioner and in 1906 Charity Commissioner. He made valuable contributions to the history of English education, especially at the Reformation period—his *English Schools at the Reformation, 1546-48* (1896), by an accumulation of evidence, disproved the claims so often made for Edward VI as the founder of schools, and furnished an entirely new view of education in England before the Reformation. This work has in a measure been supplemented by the publication of *Educational Charters and Documents* (1910). Leach contributed considerably on the history of schools to the *Victoria County Histories*. Other publications include: *History of Winchester College* (1880); *History of Bradfield College* (1900); *Early Yorkshire Schools* (1899, 1903); *History of Warwick School* (1904).

LEACH, WILLIAM ELFORD (1790-1836). An English naturalist, born at Plymouth. He studied medicine at St. Bartholomew's Hospital, London, and in the medical department of Edinburgh University, from which he graduated in 1812. He became interested in zoölogy, however, and in 1813 accepted a position in the British Museum, where he devoted much time to developing the natural system of arrangement (advocated by Cuvier and Latreille) in conchology and entomology. In 1815 he published the beginning of a work on British crustacea which he never finished. He was appointed assistant curator of the natural history department of the museum in 1821, but was obliged to relinquish active work in the same year because of brain trouble induced by overwork. He spent most of his remaining years in Italy and died of cholera, near Tortona. Among his most important works are: *The Zoölogical Miscellany* (3 vols., 1814-17); *Systematic Catalogue of the Specimens of the Indigenous Mammalia and Birds that are*

Preserved in the British Museum (1816); *A Synopsis of the Mollusca of Great Britain*, published posthumously in 1852. He contributed numerous papers to various scientific journals.

LEACOCK, HAMBLE JAMES (1795-1856). An African missionary. He was born in Barbados, where his father was a slaveholder. He became a clergyman and gave the privileges of the Church to all slaves of his parish, at the same time freeing his own slaves. Difficulty with the Bishop, insurrection of the slaves, depreciation in the value of property occurring, he removed to the United States, where he was settled in Kentucky, Tennessee, and New Jersey. In 1855 he sailed for Africa as a missionary of the West Indian Church Association and founded a station at Rio Pongas, Sierra Leone. Consult Henry Caswall, *The Martyr of the Pongas* (New York, 1857).

LEACOCK, STEPHEN BUTLER (1869-). A Canadian writer and educator, born at Swamoor, Hants, England, and educated at Upper Canada College, the University of Toronto, and the University of Chicago, where he took the degree of Ph.D. From 1891 to 1903 he was on the faculty successively of Upper Canada College, the University of Chicago, and McGill University. A lectureship of the Cecil Rhodes Trust led him to make a tour of the Empire in 1907-08, in the course of which he lectured on imperial organization. His writings, first of a serious character and later in lighter vein, include notably: *Elements of Political Science* (1906); *Baldwin, Lafontaine, Hincks*, in the "Makers of Canada Series" (1907); *Literary Lapses* (1910), an entertaining little book which grew slowly to a considerable popularity; *Nonsense Novels* (1911); *Sunshine Sketches of a Little Town* (1912); *Behind the Beyond* (1913); *Arcadian Adventures with the Idle Rich and Methods of Mr. Sellyer: A Book Store Study* (both 1914).

LEAD, *léd*. A city in Lawrence Co., S. Dak., 4 miles southwest of the county seat, Deadwood, on the Chicago, Burlington, and Quincy, and the Chicago and Northwestern railroads (Map: South Dakota, A 3). It has a hospital, the Hearst Free Kindergarten and Recreation Building, and the Hearst Free Library. The city is in the noted Black Hills mining region and has extensive gold mining and commercial interests. Pop., 1900, 6210, 1910, 8392; 1914 (U. S. est.), 9321.

LEAD (AS. *léd*, Dutch *lood*, MHG *lēt*, Ger. *Lot*; connected with OIr. *luaid*, lead). One of the well-known metallic chemical elements. It is mentioned in the Book of Numbers, as part of the spoils taken from the Midianites, and also in the Book of Job. Pliny gave the name of *plumbum nigrum* to lead, while tin he called *plumbum candidum*. Among the alchemists lead was designated by the character which is supposed to represent the scythe of Saturn. It is found native in small quantities, merely as a mineralogical curiosity. Its compounds found in nature include the sulphide, the carbonate, the sulphate, the chlorophosphate, a chloroarsenate, as well as numerous compounds with rare elements, such as chromium, selenium, tellurium, vanadium, etc.

Lead Ores. The principal ore of lead is galena (PbS), which contains 86.6 per cent of metal. The sulphate (anglesite), the carbonate (cerussite), and the chlorophosphate (pyromorphite) are occasionally found in sufficient quantities to warrant exploitation; while the chloro-

arsenate, chromate, chlorovanadate, molybdate, oxide, and other compounds have little metallurgical importance. Galena nearly always contains some silver and usually a little arsenic, antimony, copper, zinc, and gold. Galena is widely disseminated, although it rarely occurs in large deposits. Along the Atlantic border of the United States there are numerous localities where it is found in veins that cut through the Archean and Paleozoic rocks, the gangue material being quartz or calcite. These deposits have not been worked, however, for many years. One of the most productive mining regions is in southeastern Missouri. The ore is disseminated in limestone through a thickness of about 200 feet, and it has been taken out in enormous quantities from the workings at Mine La Motte, Doe Run, and Bonne Terre. Galena, associated with zinc blende, is found in Illinois, Wisconsin, and Iowa in proximity to the Mississippi River, and also in southwestern Missouri in Jasper and Newton counties, and across the Kansas border in Cherokee County. The argentiferous lead ores of the Rocky Mountain States are found in carboniferous limestone, they yield hard and soft ores containing cerussite and silver chloride. In the deeper workings the oxidized ores give way to unchanged sulphides, which are now of predominant importance. Lead-silver mines are operated at several localities in Idaho, Colorado, and Utah. Large quantities of lead in crude form are imported into the United States from Mexico and British Columbia and refined by Western smelters.

Metallurgy. Numerous minerals contain lead, but only three occur in sufficient quantities to constitute lead ores, viz., the sulphide, galena, PbS (Pb, 86.6 per cent); the carbonate, cerussite, PbCO₃ (Pb, 77.5 per cent); and the sulphate, anglesite, PbSO₄ (Pb, 68.3 per cent). Galena, the most important of these ores, is classed as argentiferous or nonargentiferous, depending upon the amount of silver present. The nonargentiferous lead ores of the United States occur chiefly in the Mississippi valley, which contributes more than one-third of the total amount of lead produced from domestic ores. Since the beginning of the present century, however, it has been found profitable to desilverize some of the lead produced from ores which were formerly classed as nonargentiferous. In recent years at least one-half of the silver and one-tenth of the gold annually produced in the United States have been obtained from lead smelting, either by the treatment of lead ores alone, or by adding silver and gold ores to the charge in the lead furnace, the reduced metallic lead serving to collect the precious metals.

There are three processes used for smelting lead sulphide ore: roasting and reaction, roasting and carbon reduction, and iron precipitation, all producing crude lead which requires subsequent refining to yield a commercial product. The carbonate and sulphate ores are generally added to the charge of roasted sulphide ores prior to the reduction by carbon.

The Roasting and Reaction Process.—This process, called also "air reduction," consists in roasting galena at a comparatively low temperature in order to transform a large part of the lead sulphide into sulphate and oxide, whereupon, by raising the temperature, these compounds are caused to react upon one another, yielding molten lead which separates from the charge, and a residue of rich slag which

is subsequently treated in a special furnace for the recovery of its metallic contents. In Europe the operations are conducted in a small reverberatory furnace, while in the United States a small low furnace, called a "Scottish hearth," is used.

The Roasting and Reduction Process.—In this process, which contributes at least three-quarters of the annual output of lead in the United States, the sulphide ore is first roasted in reverberatory furnaces, which are usually operated mechanically, or in a special form of converter, or "pot," which partially roasts and sinters the ore mixture with the aid of an air blast. Lately an improved form of sintering machine, developed by Dwight and Lloyd, has been extensively used. This is radically different from all other sintering devices, furnishing a continuous discharge of porous and coherent material from a slowly revolving drum upon which the reactions proceed through successive portions of a thin layer of ore. The agglomerated roasted ore, generally with additions of oxidized lead ores, gold ores, or silver ores, is then smelted in blast furnaces, alternate layers of ore and flux, and fuel (charcoal or coke) being charged at the top, and a blast of cold air being introduced at the bottom of the furnace. The products of this operation are metallic lead, lead matte, slag, and sometimes speiss. The molten crude lead is ladled from the forehearth of the furnace and cast into elongated pigs of crude metal, called "base bullion." The slag flows from the furnace continuously and is removed by large slag pots to the dump. The matte, consisting essentially of lead, iron, copper, and sulphur, and the speiss, which is chiefly iron, lead, sulphur, and arsenic, are subjected to special treatment for the recovery of the lead, copper, and precious metals contained.

The Iron Reduction Process.—This process comprises smelting raw or partly roasted galena in a shaft or a reverberatory furnace and adding metallic iron in order to form a lead matte, which is subsequently roasted and smelted for its lead content. The process is rarely used alone, but metallic iron is frequently used in other processes to aid in the decomposition of the lead sulphide present.

Refining.—The crude lead produced by the processes above described is more or less impure, from the presence of copper, arsenic, antimony, zinc, iron, bismuth, tin, sulphur, and the precious metals, gold and silver. When the crude metal does not contain sufficient silver to warrant special treatment, it is refined by blowing steam through the molten metal contained in an iron kettle or by slow melting with free access of air in a reverberatory furnace. The steam oxidizes the impurities which collect on the surface and are skimmed off, leaving the refined lead to be cast into pigs for commerce, each weighing from 80 to 110 pounds. When the crude metal contains an appreciable quantity of silver (base bullion), with or without a small proportion of gold, it is generally desilverized and refined by a special treatment with zinc or by the electrolytic process. The former method, known as the Parkes Process, is based upon the very limited miscibility of lead and zinc and the tendency of silver (and gold) to collect in the upper, zinc-rich layer. In practice, about 2 per cent of metallic zinc is added to a kettle containing up to 50 tons, or more, of molten crude lead. The temperature is raised

to the melting point of zinc (about 420° C.) and the latter thoroughly incorporated by agitation with steam or with mechanical devices. On cooling, the zinc, being less fusible and of a lower density, solidifies and rises to the surface as a crust, carrying with it the precious metal. This crust, carrying some lead, is removed and subsequently treated for its zinc, silver, and gold contents. (See under SILVER, METALLURGY OF.) The desilverized lead remaining in the kettle is further refined by oxidation with steam, or by an oxidizing fusion in the reverberatory furnace, until of sufficient purity for the market. The lead finally produced contains but a few hundredths of 1 per cent of impurities.

Base bullion may also be refined electrolytically by suspending in multiple flat plates of the crude metal (anodes) together with thin plates of pure lead (cathodes) in a tank containing an electrolyte of lead fluosilicate, through which a current of electricity is passed.

Production. The total production of lead in the world during 1913 was estimated at 1,270,458 short tons; of this quantity the United States contributed 411,878 tons (domestic refined); Spain, 223,767 tons; Germany, 199,627 tons; Australasia, 127,867 tons, and Mexico, 68,343 tons. The production of primary lead in the United States during 1913 is divided as follows: Idaho, 137,802; Missouri, 152,430, Colorado, 42,840; Utah, 71,069, making with the production of other States, a total of 436,430 short tons, in addition to 50,582 tons smelted or refined which was derived from foreign ore and base bullion, a smaller quantity than usual on account of the curtailment of the Mexican output. About one-third is consumed for the manufacture of pipe, one-fifth for making shot, the rest for sheet lead, alloys, etc.

Bibliography. For the occurrence of lead ores consult Kemp, *Ore Deposits of the United States and Canada* (New York, 1900), and Ries, *Economic Geology* (3d ed, New York, 1910), while for a concise description of the metallurgy of lead, consult Schnabel, *Handbook of Metallurgy* (London, 1905); Hofman, *Metallurgy of Lead* (New York, 1904); Collins, *Metallurgy of Lead* (London, 1910).

Properties of Lead. Metallic lead (symbol, Pb; atomic weight, 207.1) is a bluish-gray lustrous metal that is exceedingly malleable and ductile and has a specific gravity of about 11.4. It melts at 327° C. (621° F.) and boils at from 1450° to 1600° C. It is very soft, being easily cut by a knife and scratched by the nail, and it leaves a black streak on white paper. The grade of commercial lead is often approximated by applying these simple tests. It is an inferior conductor of both heat and electricity. Metallic lead is extensively used for water pipes but since lead is somewhat soluble in water, it is particularly desirable that caution should be taken to draw off water that has been standing in pipes before using, especially when required for drinking. Special tin-lined pipe is made to overcome this danger of lead poisoning. Owing to the fact that lead resists the action of acids, it has been extensively used in the construction of lead chambers in the manufacture of various acids, especially sulphuric. It is also employed in the manufacture of shot. The alloys of lead with other metals have been sufficiently described under ALLOY.

Compounds of Lead. The two most important among the compounds of lead with oxygen

are litharge and minium. *Litharge* is obtained when molten lead is heated at a moderate temperature in the air with constant stirring. It is used in the arts in the manufacture of flint glass, as a glaze for earthenware, for the preparation of lead salts, as a paint, and for drying oils. *Minium*, which has been known since the time of Pliny, is a scarlet crystalline granular powder, usually prepared by carefully heating very finely divided pure litharge or white lead. It finds extensive use in the arts as a pigment, also in the manufacture of flint glass, as a cement for making steam-tight joints, and in the manufacture of secondary batteries. (See MINIMUM.) Lead combines with carbon dioxide to form the carbonate, which is found native as cerussite (q.v.). *White lead*, or basic carbonate of lead, $\text{Pb}(\text{OH})_2\text{PbCO}_3$, is a white heavy powder. It is extensively used in the arts as a pigment and as a body for other colors in the manufacture of paints. It is produced artificially by the decomposition of basic acetates of lead by means of carbon dioxide. (See PAINTS.) *Lead acetate*, or sugar of lead, $\text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot 3\text{H}_2\text{O}$, is made by adding lead oxide to acetic acid and gently heating the mixture. It is used in medicine, in the arts, as a clarifying agent in the refining of sugar, and to a certain extent in chemical analysis. *Lead sulphate*, which is found native as anglesite, may be obtained artificially by precipitating a lead salt with sulphuric acid, yielding a heavy white powder which is sometimes used as a substitute for white lead. The various lead chromates are colored yellow; they are used as pigments and in calico printing.

Medicinal Uses of Lead Compounds. A number of lead compounds are employed in medicine as astringents and sedatives. Most of them are thus applied externally for weeping eczema and ulcerations. The acetate is given internally as a remedy for diarrhœa in typhoid fever, for gastric ulcer, for intestinal hemorrhage, etc. The astringent action for which principally lead compounds are used, both externally and internally, is very powerful. Combined with laudanum (q.v.) in the form of lead and opium wash, lead is an excellent sedative for sprains, etc. While lead compounds have no effect on the healthy unbroken skin, they speedily form a coating of coagulated albumin on sores and ulcers, and cause coagulation of albumin in the tissues and contraction of the small vessels. For their excellent sedative effects, lead salts are used in pruritus. Ordinary "lead water" contains lead in the form of *subacetate*. *Lead carbonate* (basic) is a 10 per cent constituent of the official "ointment of lead carbonate." *Lead iodide* is a 10 per cent constituent of the ointment bearing its name. *Lead oleate* is contained in ordinary lead plaster and in the "Diachylon ointment" which is made from it.

Lead Poisoning. Acute poisoning, which is but seldom met with, is due to the irritant action of lead salts on the alimentary canal. The treatment consists in administering an emetic (e.g., 20 grains of zinc sulphate), washing out the stomach, and then giving a dose of Epsom salt. Much more common and important is the chronic form of lead poisoning. Chronic lead poisoning may be due to drinking water that has passed through new lead pipes (in course of time, a deposit of insoluble salts forms on the inner walls of pipes, and thus the danger of lead being dissolved in the water is considerably dimin-

ished), or water that has been kept for some time in lead cisterns. The amount of lead that may thus be dissolved depends much on the quality of the water. Considerable amounts are dissolved if the lead is exposed alternately to the action of air and of water. Another source of chronic lead poisoning is in the often uncleanly habits of painters, plumbers, and workmen engaged in the manufacture of lead compounds. Absorbed for the most part by the kidneys, lead may cause pronounced symptoms of anæmia, gout, chronic inflammation of the kidneys, chronic inflammation of the peripheral nerves, muscular paralysis, and more rarely certain forms of epilepsy and insanity. A well-known symptom consists in the formation of a characteristic dark-blue line on the gums, due to the precipitation of black sulphide of lead, the sulphur coming from the food or from tartar on the teeth. Another common symptom is known as "painter's colic." The treatment of chronic lead poisoning consists in the administration of opium, cathartics, sour lemonade, soluble sulphates (Glauber's salt or Epsom salt), and potassium iodide. Care must be taken to remove the cause and thus prevent further poisoning.

Bibliography. Thomas Oliver, *Diseases of Occupation from the Legislative, Social, and Medical Points of View* (New York, 1908); id., *Industrial Lead Poisoning, with Descriptions of Lead Processes in Certain Industries, in Great Britain and the Western States of Europe* (Washington, 1911); Legge and Goadby, *Lead Poisoning and Lead Absorption* (London, 1912); W. G. Thompson, *The Occupational Diseases* (New York, 1914) See also OCCUPATIONAL DISEASES.

LEAD, SOUNDING. A device for obtaining soundings. It almost invariably consists of a lead bar of nearly cylindrical or prismatic shape, in length five or six times its diameter, having a cup-shaped recess in the larger (which is the lower) end and a hole for the lead line in the other. The recess in the bottom of a lead is for the *arming*, which usually consists of tallow; this strikes the bottom when the lead is cast, and some sand or mud (or whatever the bottom is composed of) adheres to the arming and may be examined. If the bottom is clean and rocky, this may also be determined by the effect on the arming. Sounding leads are of different sizes, *hand leads* weigh from 5 to 14 pounds, *coasting leads* from 25 to 50 pounds, and *deep-sea* (pronounced *dipsy*) *leads* from 75 to 120 pounds. For soundings greater than 20 fathoms, sounding machines are now chiefly used. See SOUND, SOUNDING.

Lead Line. The lead lines are made of white line, wetted and carefully stretched before marking and frequently examined and measured to see that they have not stretched or shrunk. The marking on hand lead lines is as follows: at 1 fathom, a toggle or piece of leather; at 2 fathoms, two strips of leather; at 3 fathoms, three strips of leather; at 5 fathoms, a white rag; at 7 fathoms, a red rag; at 10 fathoms, a piece of leather with a hole in it; at 13, a blue rag; at 15 and 17 fathoms, the same as at 5 and 7; at 20 fathoms, 2 knots. The other fathoms are not marked and are called *deeps*, the lead line being said to be divided into *marks* and *deeps*. For hydrographic work, hand lead lines are marked at every fathom, the *deeps* being shown by a small rag at 8, 9, 16, 18, and 19 fathoms; at 4 fathoms a piece of leather with

4 tails, and at 11 and 12 the same as 1 and 2 (omitting the toggle). In addition every foot up to 5 fathoms is shown by a very small piece of white rag worked into the lay of the rope and every half fathom by a piece of twine. Deep-sea lead lines are marked at 20 fathoms with a piece of twine having two knots, at 30, with three knots; at 40, with four knots, and so on; while at every intermediate 5 fathoms there is a small piece of twine with one knot.

LEAD, or **LEADE**, lēd, MRS. JANE (WARD) (1623-1704). An English mystic. She was born in the County of Norfolk. While still a girl, she began to hear miraculous voices. In 1654 she married a relative, William Lead, who died in 1670, and thenceforth Mrs. Lead lived quietly in London. Influenced by the writings of Jakob Böhme (q.v.), which had appeared in English, she began, in 1670, to have visions. These she recorded in successive volumes. One of them, in 1693, fell into the hands of Fischer of Rotterdam and was translated by him into Dutch. Other volumes and translations followed, and Mrs. Lead became a recognized leader among the mystics of England, Holland, and Germany. Her followers called themselves The Philadelphia Society and believed her to be a true prophet. About 1693 she made the acquaintance of Francis Lee, a young Oxford scholar (because of his Oriental learning called Rabbi Lee), who became her amanuensis and adopted son and married her daughter. She died in an almshouse at Stepney, London, Aug. 19, 1704. Her writings number 16 titles and were once popular, but now are scarce. A few have been lithographed in the *Manuscript Library* (Glasgow, 1884 et seq.), e.g., *The Heavenly Cloud Now Breaking: The Lord Christ's Ascension Ladder Sent Down* (1681), treating of death and resurrection; *The Revelation of Revelations* (1683), recounting her visions; *The Wonders of God's Creation Manifested in the Variety of Eight Worlds, as they Were Made Known Experimentally unto the Author* (1695).

LEAD CHROMATE. See CHROMIUM.

LEADENHALL MARKET. A great London market for the sale of poultry, game, and hides. Its name is derived from the lead-roofed manor of Sir Hugh Neville which anciently occupied the site.

LEADENHALL STREET. A well-known London street, the continuation of Cornhill. On it formerly stood the East India House, removed in 1862.

LEADER. The name given to the performer in an orchestra who plays the principal first violin. He is called concert master. It is his duty to attend to a uniform bowing of the violins, as it would look awkward if some performers used the up stroke, while others used the down stroke. Upon him devolves the duty of playing all solo passages called for in any orchestral work, and he is supposed to be able to take the conductor's place in case of emergency. In small orchestras the leader is generally also the conductor (q.v.) and uses his bow as a baton in passages that offer rhythmic difficulties.

LEADER, BENJAMIN W. (1831-). An English landscape painter. He was born in Worcester and studied at the Worcester School of Design and at the Royal Academy schools in London. He speedily gained popularity and was made a Royal Academician in 1864. His work, which revived the traditions of the great English landscape painters, is ably composed and

possesses a strong lyric note. Leader painted chiefly landscapes of western Britain. Among the best are: "The Valley of the Llugwy" (1833, Tate Gallery, London); "Tintern Abbey in . . ."; "A Quiet Valley among Welsh . . ."; "360, Worcester Gallery"; "In the Evening it Shall Be Light"; "The Weald of Surrey" (1901). He received a gold medal at the Paris Exposition in 1889, the cross of the Legion of Honor, and a medal at Chicago in 1893. Consult Lewis Lusk, "Life and Work of Benjamin W. Leader," in *Art Annual* (London, December, 1901).

LEAD GLANCE. See GALENA.

LEADING OF VOICES. A term applied to the progression of the individual parts or voices in a musical composition, whether vocal or instrumental. What constitutes good or bad writing depends chiefly upon the skill with which the various voices are led. The fundamental principle of securing a masterly leading of the voices is the progression by seconds or steps, whether they be whole or half steps, diatonic or chromatic. Another important principle is the retention in the same part of the same note if it is common to two or more chords. The leading of the bass, however, is an exception to these rules, since the tendency of the bass part is to proceed from the fundamental tone of one chord to the fundamental of the next. Although progression by steps is generally desirable, it is not always practicable in modern music. This is especially true in the case of the (generally highest) part having the melody, which frequently proceeds in harmonic skips. The leading of the voices is far more free in modern music than it was formerly, and hence a distinction is made between *strict* and *free* style. The former avoids in the progression of voices all difficult intervals (augmented second, fourth), whereas the latter admits such intervals under certain circumstances. Again, there is greater freedom in the progression of voices in instrumental compositions than in vocal, because pure intonation of difficult intervals is more easily attained by means of an instrument than by the human voice. In the leading of voices it is also of great importance whether a voice or part is *real* or only *reinforcing*. See HARMONY.

LEADING STAR. See LODESTAR.

LEADING TONE OR NOTE. In music, the major seventh of the diatonic scale, or the semitone below the octave, to which it leads. The resolution of this note in a chord is always a semistep above. Hence it can never be doubled, as open octaves would result in the progression to the next chord. See HARMONY.

LEAD POISONING. See LEAD; OCCUPATIONAL DISEASES.

LEADS, lēdz, THE (It. *I Piombi*). The prison cells under the leaden roof of the Doges' Palace at Venice. These cells were destroyed in 1797.

LEADVILLE, lēd'vil. A city and the county seat of Lake Co., Colo., 78 miles in a direct line southwest of Denver, on the Colorado Midland, the Denver and Rio Grande, and the Colorado and Southern railroads (Map: Colorado, C 2). The surrounding scenery offers magnificent attractions; and the city itself, at an elevation of 10,200 feet, affords much of unusual and striking interest. There are large sampling, refining, and reduction works, and smelting furnaces; also a handsome theatre, the Elks Opera House, hospitals, a Federal building, and a United

States fish hatchery. Leadville was incorporated as a town in 1877 and as a city in 1878. Pop., 1900, 12,455; 1910, 7508.

Settled in 1860, that locality, known then as California Gulch, post-office town, Oro, soon became prominent as the centre of an active gold-mining industry. The apparent exhaustion of the gold deposits during the following decades, however, gave a serious setback to its progress. After large bodies of lead-silver ores had been opened in California Gulch, from $\frac{1}{2}$ mile to 4 miles distant, the town boomed, the population increasing from about 300 in 1877 to at least 6000 in the following year and to 35,000 in 1879. Other rich silver deposits were soon found on Carbonate, Iron, and Fryer hills, and the mineral output for Leadville during the period 1879-1905 reached \$328,487,146. Further prospecting has been rewarded by the discovery of rich ores within the city itself. For some time the region about Leadville held first place in the United States in the production of lead and silver.

LEAF (AS. *leaf*, Goth. *laufs*, OHG. *laub*, Ger. *Laub*, leaf). A lateral, usually green outgrowth from the stem of a plant. The most conspicuous form is the foliage leaf, i.e., one which contains green tissue and is prominently concerned in food manufacture. (See PHOTOSYNTHESIS.) Very simple expansions of green tissue, which are commonly called leaves, occur among the *algæ*, especially the more complex marine forms, and in the case of the leafy liverworts and the mosses. But the highly organized foliage leaf is found only in the fern plants (pteridophytes) and seed plants (spermatophytes), associated with the vascular system. Such a leaf may develop several distinct regions, the most conspicuous of which is the expanded portion or blade. In many cases where the blade arises directly from the axis, and no other region appears, the leaf is called sessile. Very frequently, however, the blade has a stalk of greater or less length, called the petiole. In many cases, also, the petiole bears at or near its junction with the axis a pair of appendages of various form, called stipules. The stipules may be conspicuous and leaflike or merely minute bractlike bodies; they may be distinct from one another or united in various ways. In the smartweeds they unite and form a conspicuous sheath about the stem just above the insertion of each leaf. Still another leaf region which may appear conspicuously in grasses is the sheath, which more or less surrounds the stem. The angle formed by the leaf with the stem is called the axil.

Forms of Leaves. The form of the blade varies greatly and has given rise to a long list of descriptive terms, which are of service only to the specialist in classification. These terms apply to the general outline of the leaf, as linear, lanceolate, ovate, cordate, etc.; or to the character of its margin, as entire, serrate, toothed, lobed, etc.; or to the character of its apex or base, as acute, obtuse, etc. The greatest modification in the form of the blade arises from its branching, in which case the general blade becomes divided up into smaller blades called leaflets. Such branching leaves are usually called compound, and the compounding may occur twice or thrice or even more times, resulting in a general blade made up of very numerous leaflets. The stalks of the leaflets are called petioles, and their stipules are stipels. Closely associated with the contour and branching of leaves is the system of veining or venation

(q.v.). Two general types of venation are recognized, called the parallel and the reticulate (or net-veined) types. In a parallel-veined leaf the prominent veins run approximately parallel from the base to the apex of the blade, resulting in a comparatively narrow and elongated outline and an entire margin, as in grass blades. This type of venation is characteristic of the monocotyledons, although all of them do not possess it, nor is it absolutely restricted to them. A more significant phrase for this type, perhaps, is closed venation, implying that the veins do not end freely in the margin. As a result of this, such leaves do not become toothed or lobed, nor do they branch. In a reticulate veined leaf the veins branch freely in various directions, and there is usually evident, especially on the lower surface, a distinct and often conspicuous network of veins. Such leaves may be characterized as exhibiting open venation, as many of the veins have free ends, especially in the margins, resulting in a tendency to toothing, lobing, and branching. The dicotyledons exhibit such leaves in the greatest profusion. The ferns also have open venation, but the veins fork repeatedly, i.e., they are dichotomous. (See DICHOTOMY.) Reticulate veined leaves exhibit two prominent types, the palmate and the pinnate. In the former, three or more main ribs diverge from the base of the blade, resulting in a broad outline. When such leaves are lobed or branched, they are said to be palmately lobed or compound. In pinnate leaves there is a main rib (midrib) which runs through the blade from base to apex and gives rise to lateral ribs of

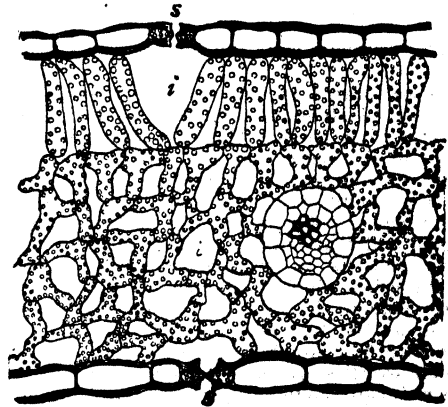


FIG. 1. CROSS SECTION OF LEAF.

Showing upper and lower epidermis with stomata (a), air chamber (b), in palisade parenchyma, and section of a vein in the spongy parenchyma.

secondary importance, resulting in a comparatively narrow outline. When such leaves are lobed or branched, they are said to be pinnately lobed or compound. Fern leaves (fronds) are very commonly pinnately compound, and a special terminology is applied to the branches, the main branches being called pinnae, and the ultimate branches being called pinnules.

Structure of Leaves. The minute anatomy or histology of the ordinary foliage leaf is quite uniform. The upper and under surfaces are bounded by a single layer of colorless compact cells, forming the epidermis (Fig. 2). Between these two layers of epidermis, above and below, the working cells of the leaf are found, called

collectively mesophyll. The mesophyll cells contain the green color bodies (chloroplasts) and in ordinary horizontal leaves are organized into two distinct regions. The cells against the upper epidermis are elongated and stand closely side by side, with the long axis at right angles to the leaf surface. This is called the palisade region of the mesophyll, and it is explained by the fact that this surface is exposed to the direct rays of light. The mesophyll cells in the lower region of the leaf are irregular in form and loosely aggregated, leaving irregular but continuous intercellular passageways. This region is called the spongy mesophyll. The third histological region of the foliage leaf is the vascular region, represented by the veins which traverse the mesophyll in every direction. The epidermis does not hermetically seal the mesophyll tissue from the outside air, but in leaves exposed to air

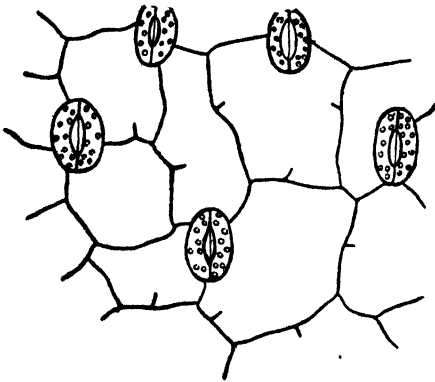


FIG. 2. EPIDERMAL CELLS AND STOMATA FROM A LEAF.

it is perforated by numerous very small openings, called stomata (Fig. 3), popularly known as breathing pores. They are automatic gateways in the sense that the calibre of the pore may be enlarged or diminished in response to various conditions, thus regulating the amount of exchange between the air in the mesophyll region and that outside. The regulating mechanism consists in two concentric cells, called guard cells, which face each other, and which may change the size of the opening between them, as the lips may regulate the opening of the mouth. Stomata occur in any epidermis which overlies green cells, and therefore they are naturally found in greatest numbers on the leaves. In the ordinary horizontal (dorsiventral) leaves they occur for the most part and sometimes exclusively on the undersurface, averaging about 60,000 to the square inch, although in some cases the number may reach over 400,000. Leaves which are equally exposed to the light on both sides have the stomata equally distributed upon the two surfaces. In floating leaves the stomata are upon the upper surface only. The significance of the occurrence of stomata chiefly upon the underside of horizontal leaves is found in the fact that the intercellular passageways with which stomata communicate are best developed on the underside of the leaf. Associated with the epidermis of leaves there are also numerous hairs (see THICHOMES), whose occurrence and character form part of the descriptions of systematic botany. For example, if hairs are absent, the leaf is spoken of as glabrous, and, if present, the terms

pubescent, hirsute, tomentose, woolly, etc., describe their character.

Modified Leaves. There are numerous structures in plants which have long been regarded as modified leaves, i.e., leaves which have been diverted from their ordinary work as foliage leaves to serve some other purpose either exclusively or in addition to their ordinary work. It is a matter for serious doubt whether all such structures have actually been derived from foliage leaves, but they all may be grouped as foliar organs. In addition to foliage leaves, therefore, prominent among other foliar organs are the following: *pitchers*, as in the various "pitcher plants," for entrapping various insects, sensitive flytraps, as in sundews and *Dionaea* (q.v.) (see CARNIVOROUS PLANTS); *storage organs*, as in bulb scales and many seed leaves (cotyledons); *bud scales*, used for protecting young parts; *spines*, as in the barberry and holly, where every gradation between spiny-toothed leaves and true spines is found; *tendrils*, which are often leaves or leaf parts adapted for climbing; *bracts*, which are leaves modified in size and color and associated with flowers; the *floral organs*, as sepals, petals, stamens, carpels, all of which may be regarded as foliar structures, but probably not modified foliage leaves as is commonly stated.

Arrangement of Leaves. The distribution of leaves on the stem has given rise to a subject called phyllotaxy, which undertakes to study the laws which govern the distribution. The general conclusion reached is that leaves are distributed so as to economize space and to obtain a light exposure, but this is to be regarded as the result of the arrangement rather than its cause. The most fundamental classification of leaves on the basis of arrangement is into the cyclic and spiral arrangements. In the former two or more leaves stand together at the same joint (node) of the stem, dividing the circumference between them. If the cycle consists of two leaves, they are called opposite, while, if it consists of three or more, they are called whorled or verticillate. In the spiral arrangements the leaves stand singly one after another, i.e., each joint of the stem bears but a single leaf, and they are commonly spoken of as alternate. It is the spiral arrangement which has developed the largest discussion in reference to the laws of phyllotaxy, for the cyclic arrangement represents merely two or more spirals ascending the stem. In the simplest alternate arrangement the second leaf stands upon the opposite side of the stem from the first, and the third leaf stands directly over the first. This results in two vertical rows of leaves, one on each side of the stem, an arrangement indicated by the fraction one-half. The fraction signifies the angular divergence between two successive leaves, and the denominator the number of vertical rows. The next higher arrangement is one in which the angular divergence between two successive leaves is one-third of the circumference, and, as a consequence, the leaves occur in three vertical rows, and the fractional expression is one-third. The next higher arrangement is indicated by the fraction two-fifths, which means that the angular divergence is two-fifths of the circumference of the stem, that there are five vertical rows, and that the spiral line makes two turns around the stem before it reaches the same vertical row with which it started. The curious feature of the system appears at this point. Succeeding frac-

tions may be obtained by adding the numerators and denominators of the two preceding fractions. For example, the fraction which follows the one-half and one-third arrangements is two-fifths, and the next would be three-eighths, and so on. The higher numbers, such as five-thirteenths, eight twenty-firsts, etc., occur in certain pine cones, but in ordinary foliage leaves the lower numbers of the series are the common ones. It is often difficult to determine the normal arrangement, since the stem axis is not always perfectly straight in its growth.

Ecology of the Leaf. Ecologically the leaves of plants may be considered (1) from the standpoint of the various leaf forms found in nature,

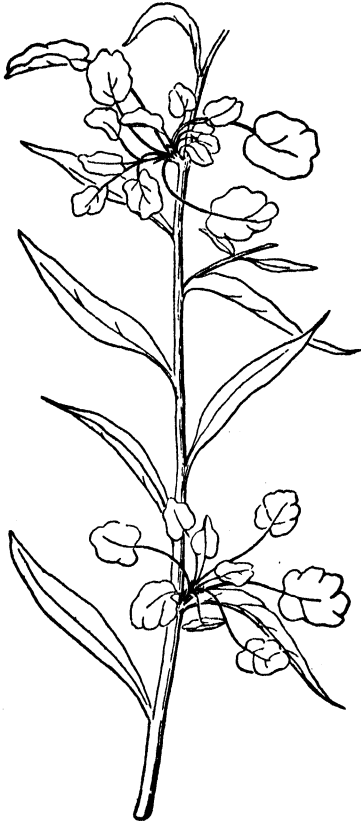


FIG. 3. BRANCH OF HAREBELL

(*Campanula rotundifolia*) which has suffered injury and has in consequence developed basal (juvenile) leaves upon the stem. This result has also been ascribed to the illumination.

and (2) from that of the evidence obtained by experiments to determine the cause of the various forms. In general, leaves are expanded organs, and they also have a position which is in most cases perpendicular to the majority of the incident rays of light. This position is technically termed diaphototropic. It can readily be seen that these conditions favor the absorption of the largest quantities of radiant energy; and, inasmuch as radiant energy is essential to the growth and life of plants, it is clear that the expanded form and the diaphototropic position are distinctly advantageous, though it by no means follows that the need for light has caused either the form or the position. Large numbers of

leaves are finely divided; this is conspicuously true in the hydrophytes (q.v.), but it is also true of a vast number of plants with aerial leaves. While we can hardly believe that compound leaves have been caused in any such way, it is nevertheless true that a larger amount of leaf surface can be presented to the sunlight than in the case of plants with entire leaves. Perhaps the most advantageous leaf type of all is that which is illustrated by the grasses; here vertical leaves or leaves which are approximately vertical are grouped together in vast numbers, probably securing the greatest leaf surface in a given space that is found anywhere in the plant kingdom. Simple experimentation shows, however, that the vertical position of grass leaves, at least in many cases, is due to mechanical causes and has little or no relation to light stimuli. Another condition which favors the admission of light is the presence of petioles. Maple leaves which are developed in the strong sunlight have short petioles, while more shaded leaves acquire long petioles and thus ultimately get into a well-lighted position, if that be possible. Petioles thus give a much greater plasticity and flexibility to leaves. Other leaves have the power of motility which is strikingly illustrated in the sensitive plant and clover. The advantage of this motility is not altogether clear, especially since the closing of the leaf occurs chiefly in the night rather than in the day. (For a further discussion of this topic, see XEROPHYTES.)

The placing of the leaves on the stems also varies to a high degree in nature, and in general there seems to be a sort of relation between the phyllotactic arrangement and type of leaf, since large leaves are commonly farther apart than small ones. Rosette plants present a very interesting type of leaf arrangement, since the outer leaves often have long petioles and the inner ones none at all; not only this, but the phyllotactic arrangement is such that the shading of one leaf by another is largely prevented. In one way or another, then, it seems that there is a general tendency in nature for plants to dispose their leaves in such a way as to prevent shading. It is very doubtful, however, if this can be regarded as a direct result of the light stimulus. If in nature leaves are not seen to shade each other to any great extent, it may be that this is not an adaptation by natural selection, but rather that the leaves which were shaded have been compelled to die through getting insufficient food; this results in a survival of the unshaded leaves. A study of the leaves of a patch of rank weeds shows that all the lower leaves have died and that only the uppermost have been able to endure.

Experimental studies on leaves by Goebel, Brenner, and others have contributed much to the solution of the question of the causes of leaf shape and form. Goebel's theory is that light is the chief factor in the matter. His experiments on cacti and on the harebell have shown that if the light is weak large leaves develop, whereas strong light develops small leaves. Other experiments which have been made more recently throw grave doubt upon Goebel's results: in the first place, many instances have been cited in which light favors rather than retards the development of leaves; and secondly, other factors which Goebel did not recognize have, even in the very forms which he studied, produced the very results which he referred to

light (Fig. 4). Kohl and more recently Brenner have considered that moisture is the chief element which affects leaf shape, particularly the relation which exists between absorption and transpiration. To illustrate, in a moist atmosphere leaves grow large because the transpiration is checked and the turgor is thereby increased. On the contrary, in dry air leaves are small because the transpiration is increased and the turgor reduced. In other words, anything which tends to increase or decrease cell

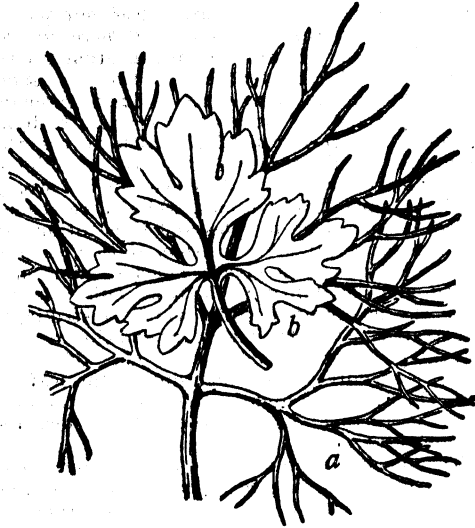


FIG. 4. LEAVES OF THE WHITE WATER BUTTERCUP (*Ranunculus aquatilis*): a, as grown in the water; b, as grown in the air.

turgescence tends to modify not only the leaf size but also the leaf form itself (Fig. 4). It is not possible at present, on account of the very small number of experiments, to reach any very definite conclusions. A great many differences which leaves show cannot now be referred to any mechanical cause, but it surely seems to be the present tendency to adopt an explanation of this kind for the variations in leaves rather than to give a teleological explanation.

The structure of leaves varies as well as the external form, and here also two prominent theories have been advanced to account for the changes observed. The chief changes which have been observed are associated with the chlorophyll cells and the epidermis. Stahl in particular has held that increased light causes the development of palisade cells. This view has been rather generally accepted, and at present there seems to be no valid reason for serious objection to it. It may, however, rightly be a subject for further investigation to settle the question of the precise effect of light upon cell structure. Leaves which are grown in a moist atmosphere develop a thin wall, whereas a thick wall is developed in a dry atmosphere. Perhaps the cause in the latter case is to be referred to the greater concentration produced by excessive transpiration. This might lead to a deposition of cell-wall material. Stomata, as a rule, are less subject to experimental change than are the other leaf organs. However, some plants, as the mermaid weed, do not develop stomata when submerged. The stimulating cause for this change has not

been suggested. For bibliography, see BOTANY. See also BUD; HISTOLOGY.

LEAF, WALTER (1852-). An English classical scholar and banker. He was born at Norwood and was educated first at Harrow School. In 1874 he graduated B.A. from Trinity College, Cambridge, having taken numerous honors, and from 1874 to 1877 he was a fellow of Trinity. Entering the banking firm of Leaf, Sons & Co., he was its chairman in 1888-92. One of the founders of the London Chamber of Commerce, he served as its deputy chairman in 1885-86, chairman in 1887, and vice president in 1914; in 1914 also he was chairman of the London County and Westminster Bank; and he was a member of the small special committee whose task it was to finance the British Empire during the European War. Cambridge gave him the degrees of M.A. and Litt.D. and Oxford that of D.Litt. In addition to his business activities he found time to devote himself to classical studies. He served as president of the Hellenic Society in 1914 and published, besides articles in learned journals, *The Story of Achilles* (1880), with J. H. Pratt; *The Iliad of Homer Translated into English Prose* (1882), with A. Lang and E. Myers; *The Iliad, Edited with Introduction and Notes* (2 vols., 1886-88; 2d ed., 1900-02), a very valuable work; an edition of *The Iliad* (2 vols., 1895-98), with M. A. Bayfield; *Companion to the Iliad* (1902); *Troy: A Study in Homeric Geography* (1912). Leaf published also *A Modern Priestess of Isis*, a translation from the Russian (1894), and *Versions from Hafiz: An Essay in Persian Metre* (1898).

LEAF BEETLE. Any one of a large family of beetles, the Chrysomelideæ, so called because both adults and larvæ feed on the leaves of plants. The family is an enormous one, as it comprises more than 18,000 species. The great majority are found in the tropics, but over 600 species occur in North America. The leaf beetles are nearly all small, the potato beetle being one of the largest of the family. The eggs, as a rule, are laid on the food plant. The larvæ of many species live on the leaves, either exposed or covered with grass. Some carry perfectly constructed cases; others are leaf miners, as the Hispini; still others are root borers and stem borers, and a few are aquatic—a remarkable diversity of habit in the larvæ of a single family. The larvæ cover themselves with excrement. The most remarkable covering formed by any insect, perhaps, is that made by a tropical American leaf beetle of the genus *Porphyraspis*, which lives on coco palms at Bahia. The larvæ are covered by a sort of bird's-nest-like coating of fibres or threads attached to the anal extremity, which are wood fibres that have passed through the alimentary canal and have been stuck together again. Some of the tropical species of this group are extremely beautiful and mounted in gold are used as jewelry. With the species of temperate regions the color usually fades and becomes sordid after death. Among well-known destructive leaf beetles are those of the genus *Crioceris* (see ASPARAGUS INSECTS), the potato beetle, and the cucumber beetle, and its allies of the genus *Diabrotica*. In California the adults injure fruit and fruit trees, and in the East they eat the leaves of cucumber, squash, and melon vines, and the young bore into the stems and roots of the same and other food plants. (See CORN INSECTS.) All the species of *Diabrotica*

are difficult insects to combat. Another group of agricultural pests in this family is that of the flea beetles. (See FLEA BEETLE.) The brown and black larvæ of the grapevine flea beetle feed on the upper surface of grape leaves. A well-known and destructive species is the imported elm-leaf beetle. (See ELM INSECTS.) On the sweet-potato and morning-glory vines small, flattened leaf beetles occur, which are gold and green. (See GOLDEN BEETLE.) Consult: George Dimmock, *Standard Natural History*, vol. ii (Boston, 1884), David Sharp, *Cambridge Natural History*, vol. vi (London, 1901); V. L. Kellogg, *American Insects* (2d ed., New York, 1908).

LEAF BUG. Any hemipterous insect of the family Capsidæ. The leaf bugs form the largest family of the true bugs. They are usually rather small, slender, and delicate insects. More than 1000 species have been described, of which 250 inhabit the United States, but there are many more undescribed and unnamed forms. They are found chiefly upon the leaves of plants, but are not all true plant feeders, and very few of them occur in sufficient numbers to become important crop enemies. The four-lined leaf bug (*Pædicapsus lineatus*) is, however, a common garden pest all through the eastern, central, and southern United States, sucking the sap of gooseberry bushes, currants, dahlias, and many other garden plants. Those species which are not plant feeders are predacious and destroy other insects.

LEAF CACTUS, ACKERMANN'S. See Colored Plate of CACTI

LEAF CRUMPLER, RASCAL. See RASCAL LEAF CRUMPLER.

LEAF-CUTTER BEE. A name given to certain species of solitary bees (see BEE) of the genus *Megachile* in consequence of their habit of lining their nests with portions of leaves or of the petals of flowers, which they cut out for this purpose with the mandibles. *Megachile centuncularis*, a species common to Europe and the United States, uses the leaves (not the petals) of roses, fitting the pieces together so as to form one thimble-shaped cell within another, in a long cylindrical burrow, the bottom of each cell containing an egg and a little pollen paste. A single female will build 30 or more cells and will occupy 20 or more days in the work. *Megachile acuta* of the United States is a carpenter as well as a leaf cutter and excavates its tunnels in soft or partly decayed wood. In each tunnel thimble-shaped cells are made of pieces of rose leaves and are filled with pollen and honey. One egg is laid in each cell, which is then sealed with circular pieces of rose leaf. The cells of the leaf-cutter bees are also not infrequently placed in cracks of houses or trees, under stones and boards in deserted earthworm holes, or in the holes of the carpenter bee (q.v.), in auger holes, or in lead pipe; and they have even been found in the nozzle of an old disused pump. See Plate of BEES.

LEAF-CUTTING ANT. These ants belong to the Myrmicine tribe *Atti* which is peculiar to America and best developed in the tropics. They cut and carry to their nests pieces of leaves for the purpose of growing a fungus. The bits of leaves are worked over into a pulpy mass and frequently mixed with caterpillar excrement or other organic material. It is inoculated by the ants with the particular fungus which they are growing and all other sorts are carefully

destroyed. The fungus is used by the ants as food. In the tropics some of the colonies are enormous. The ants work for as much as half a mile from the nest and are capable of stripping a tree in a few hours. It is impossible for man to carry on agriculture in the vicinity of such a nest. The most northern species (*Atta septentrionalis*) is found in the vicinity of New York City but its colonies are small. See ANTS.

LEAF FROG. One of the small American tropical frogs of the family Cystignathidae and genus *Hylodes*, of which about 50 species are known. All are less than 2 inches long, are as a rule brightly colored and changeable, and have the general habits of the tree frog (q.v.). The fingers as well as the toes are provided with disks, enabling the animals to cling to the leaves of plants and trees, as they habitually do. The males have vocal sacs and make chirping sounds. A remarkable species is the coqui (*Hylodes martinicensis*), of Porto Rico, Haiti, and the Antilles, whose young undergo their whole metamorphosis before emerging from the protection of the egg. The female glues about 20 large eggs, enveloped in a foamy mass upon a broad leaf or in the axil of a flag, and then seems to remain near by awaiting developments. Each embryo (tadpole) grows to maturity within its egg, developing neither gills nor gill openings, but apparently breathing through the highly vascularized tail. At last the food yolk and liquids of the egg are exhausted, the tail is rapidly absorbed, and a minute but perfectly formed frog breaks the shell and hops away. A frog of the Solomon Islands has a similar method of development within the egg. See HYLODES.

LEAF HOPPER. A bug of the family Jassidæ. The leaf hoppers are among the most abundant of the bugs and comprise a great complexity of forms. By most modern writers the group is considered of superfamily rank and is known as Jassoidea. All are small insects. One species (*Cicadula exilis*) infests winter wheat. The grapevine leaf hopper (*Erythroneura vitis*) often occurs in great numbers on the vine and is very injurious to it. It is known to grape growers as the thrips or grapevine thrips, a misleading name. (See THRIPS.) Scores of species feed upon grasses and bring about a very extensive, although probably unnoticed, damage to the grain ranges of the West.

LEAF INSECT, or WALKING LEAF. One of a very remarkable group of insects of the orthopterous family Phasmodæ, natives of tropical countries, chiefly of the East Indian region, having wings extremely like leaves, not only in color, but in the way they are ribbed and veined. The joints of the legs are also extended in a leaflike manner. So close is the resemblance that the natives of the countries where they abound firmly believe that they were once real leaves, which by some metamorphosis of habit have taken to walking. There is also a marvelous similarity between their eggs and plant seeds, even in minute structure. These insects spend their lives among foliage, move slowly, and would be much exposed to every enemy did not their leaflike appearance preserve them from observation. Spectroscopic analysis of the coloring matter of these insects' wings shows a slight distinction from that of chlorophyll, but that it does not differ from that of living leaves. Confined leaf insects will, in the absence of leaf food, eat one another's wings. See MIMICRY.

LEAF MANNA. See LEEP INSECT.

LEAF MINER. A member of a group of very small moths, known as the Tineidæ, of serial or superfamily rank, containing a number of families and more than 4000 described species. The popular name "leaf miner" refers to the fact that the larvæ of very many species mine out the chlorophyll from between the upper and lower surfaces of the leaves of plants. The leaf miners proper belong especially to the tineine families Gracillariidæ, Lavernidæ, Elachistidæ, Lithocolletidæ, Lyonetiidæ, and Nepticulidæ, but some of the Tineidæ and Gelechiidæ are also leaf miners. Others of the tineine series are leaf rollers, leaf webbers, seed feeders, twig borers, gall makers, and root feeders, and others still feed upon animal matter such as skins, fur, woolen goods (see CLOTHES MOTH), and also upon dried fruits, stored grain, and similar substances. Some of them are leaf miners only in early life and later construct cases which they bear around with them while feeding externally on the foliage of plants. This habit is characteristic of the family Coleophoridae.

Although very small, the tineines are frequently very beautiful and are ornamented with brilliant metallic scales. The wings are usually very narrow, sometimes lance-shaped, and bear long marginal fringes. Two species of *Tinea* have been recorded as viviparous. Examples of tineines are very difficult to collect and to preserve, and this accounts for the fact that, although 4000 species have been described, entomologists are really only just beginning the study of the group, which surely comprises very many thousands of species.

Certain other insects aside from these little moths are leaf miners in the larval stage, as certain leaf beetles of the tribe Hispini, certain flies of the families Oscinidæ and Anthomyiidae, and certain sawflies of the family Tenthredinidæ.

Consult David Sharp, *Cambridge Natural History*, vol. vi (London, 1901), and J. H. and A. B. Comstock, *Manual for the Study of Insects* (8th ed., Ithaca, 1909). See BUTTERFLIES AND MOTHS; SAWFLY.

LEAF MONKEY. See LANGUR.

LEAF ROLLER. A small nocturnal or crepuscular moth of the family Tortricidæ, most of which in the larval state roll themselves within the leaves of plants, fastening them with silken threads. They are generally less than an inch in breadth across the expanded wings and have naked antennæ. The fore wings are usually marked with spots and bands, but the hind wings are without ornament. The larva either rolls a leaf into a nest in which it lives singly, or in some species many of them may bind all the leaves of a branch into one common nest. The yellow active larvæ of one species (*Cacocia oerastivorana*) make such a nest on the wild or choke cherry. The larvæ change to pupæ within the nest, but just before the moth emerges the pupa makes its way to the outer surface of the nest, where it hangs attached by caudal hooks. The rolling of the leaves with the solitary species is due in part to the individual work of the larva, in part to the contraction of the silk in drying, and in part to the changes in the growth of the vegetable tissue. Some tortricid larvæ are not leaf rollers, but inhabit fruit, like the codling moth (q.v.), the well-known enemy of apples and pears; *Carpocapsa splendana*, which lives in acorns and walnuts; and *Carpocapsa salitans*, which inhabits the seeds known as

jumping beans (see JUMPING BEAN). Certain beetles (weevils) have a similar habit of rolling leaves.

LEAF SPOT. A plant disease. See DISEASES OF PLANTS.

LEAGUE (from the Lat. *leuca*). A measure of length of great antiquity. It was used by the Romans, who derived it from the Gauls and estimated it as equivalent to 1500 Roman paces, or 1.376 modern English miles. The league was introduced into England by the Normans, probably before the battle of Hastings (1066), and had been by this time lengthened to 2 English miles of that time, or 2.9 modern English miles. At the present day the league is a nautical measure and signifies the twentieth part of a degree—i.e., 3 geographical miles, or 3.456 statute miles. The French and other nations use the same nautical league, but the former nation had (until the introduction of the metric system) two land measures of the same name: the legal posting league, 2.42 English miles, and the league of 25 to the degree, 2.76 statute English miles. The former became 4 kilometers (2.49 miles).

LEAGUE (OF, Fr. *ligue*, ML. *liga*, *lega*, bond, from Lat. *ligare*, to bind). In French history, a name specifically applied to the Holy League (Sainte Ligue) organized in 1576 by Henry, Duke of Guise, in opposition to the granting of the free exercise of their religion and political rights to the Huguenots. While its ostensible object was the maintenance of the Roman Catholic religion in its predominance, the real aim of the Guises was rather to exclude the Protestant princes of the blood from the succession to the throne. For an account of the civil war that ensued, see FRANCE; HENRY III; HENRY IV; HUGUENOTS; and consult the references given; also F. A. M. Mignet, *Histoire de la Ligue* (5 vols., Paris, 1829).

LEAGUE OF THE IROQUOIS. See IROQUOIS.

LEAGUE OF THE PRINCES (Ger. *Fürstentbund*). A league originated by Frederick the Great, in 1785, to oppose Joseph II in his purpose of altering the constitution of the German Empire and extending the Austrian power in south Germany by the acquisition of Bavaria in exchange for Belgium. The league was formed between Prussia, Saxony, and Hanover on July 23, 1785, and was afterward joined by the dukes of Brunswick, Mecklenburg, Saxe-Weimar, and Saxe-Gotha, the margraves of Anspach and Baden, the Elector of Mainz, and other princes. Having effected the abandonment of Joseph's plans, the league was dissolved at Frederick's death, and a later attempt by Charles Augustus of Weimar to make it the basis of a German union under the leadership of Prussia was unsuccessful. Consult Leopold von Ranke, *Die deutschen Mächte und der Fürstentbund* (2d ed., Leipzig, 1875).

LEAGUE OF THE PUBLIC WEAL (Fr. *Ligue du bien public*). An alliance of the great French nobles against Louis XI, formed in 1465 under the leadership of Charles, Count of Charolais (Charles the Bold of Burgundy). The ostensible object of the nobles was to put an end to the tyrannical government of Louis XI; but in fact their objects were purely selfish, their only aim being to regain the old extensive feudal privileges, which had enabled them to defy even the royal power. They gained a victory over Louis XI on July 16, 1465, at Montlhéry,

and in October, in the Peace of Conflans, the King was forced to make great concessions. But the advantage gained by the nobles was of short duration, for the crafty monarch succeeded in crushing them individually and made the royal power supreme in France. See FRANCE; LOUIS XI. Consult Ernest Lavisse, *Histoire de France depuis les origines jusqu'à la révolution*, vol. iv, part ii (Paris, 1902).

LEAKE, SIR JOHN (1656-1720). An English admiral. He was born at Rotherhithe, London, England; early entered the navy, served under his father in 1673 in the action between Sir Edward Spragg and Van Tromp; and afterward, when appointed captain, convoyed victualers into Londonderry, thus compelling the enemy to raise the siege. In 1702 he was put in command of a squadron and sent to Newfoundland as Governor. Arriving there, he speedily destroyed the French settlements and their fishing outfits. For these services he was made on his return rear admiral and soon afterward vice admiral of the blue and knighted. In 1704 he displayed great skill and gallantry in relieving Gibraltar when it was on the point of being taken by 500 Spaniards who had climbed up the rock. Soon after he was made vice admiral of the white and again, in 1705, relieved Gibraltar by destroying the French squadron. In 1706 he relieved Barcelona, when it was reduced to great extremity by the Spaniards and French, obliging King Philip to raise the siege. In the same year he commanded the fleet which captured Alicante, Cartagena, and the island of Majorca. He was now made admiral of the white and commander in chief of the Mediterranean fleet. In 1708 he reduced Sardinia and Minorca. In 1709 he was made rear admiral of Great Britain. The same year he was appointed Lord of the Admiralty and continued high in office till the death of Queen Anne. He was several times a member of Parliament for Rochester. On the accession of George I he was superseded on a pension of £600 a year. He died at Greenwich on Aug. 21, 1720. *The Life of Sir John Leake*, by Stephen Martin Leake, his nephew, was privately printed in London (1750).

LEAKE, WILLIAM MARTIN (1777-1860). A British officer and archaeologist, born in London. He was educated at the Royal Military Academy at Woolwich, received a commission as second lieutenant in the artillery service, and in 1794 was ordered to the West Indies, where he remained for four years. In 1799 he was sent as captain to instruct the Swiss in artillery practice. Leaving Constantinople in 1800 to join the Turks, who were then fighting the French in Egypt, he traveled through Asia Minor, Jaffa, and Egypt, and even traversed the desert, but arrived only after the capitulation had been signed. In 1801 he made a careful survey of Upper Egypt and in 1804 traveled through the greater part of Turkey and Greece, surveying the coasts and fortresses and making collections, which are now in the British Museum. After undertaking extensive explorations in the Orient for the British government (1808-13), he retired in 1815 with the grade of lieutenant colonel. His principal works, which are all marked by thoroughness, minuteness, and technical skill, are: *Researches in Greece* (1814); *The Topography of Athens* (1821), the first scientific treatise on the subject and still of great value; *Journal of a Tour in Asia Minor, with Comparative Remarks on the Ancient and Modern Geography*

of that Country (1824); *Travels in the Morea* (1830); *Travels in Northern Greece* (1835); *Peloponnesiaca* (1846); *Numismatica Hellenica* (1854), with a supplement (1859). Consult J. H. Marsden, *Brief Memoir of the Life and Writings of W. M. Leake* (London, 1864), and J. E. Sandys, *A History of Classical Scholarship*, vol. iii (Cambridge, 1908).

LEAL, J. DA SILVA MENDES. See MENDES LEAL, JOSÉ DA SILVA.

LEAMINGTON, lēm'ing-ton, or LEAMINGTON PRIORS. A fashionable watering place in Warwickshire, England, on the Leam, a tributary of the Avon, about 2 miles from Warwick (Map: England, E 4). Leamington is of modern growth and owes its importance to its mineral waters, saline, sulphurous, and chalybeate. It has a proprietary college, erected in 1847 in the Tudor style, and numerous other educational establishments. The town hall, a handsome Renaissance building erected in 1884, contains a free library and art gallery. In the centre of the town is a pump room, a handsome structure. The manufacture of cooking ranges is an important industry. The town owns the Spa baths, open-air baths, water supply, gas, tramways, and cemeteries, and maintains free libraries, technical schools, and beautiful public gardens and parks. Leamington was an insignificant village until 1796, when the waters were discovered, and since that time they have attracted not only visitors, but residents. In 1838 the town obtained permission to call itself Royal Leamington Spa, but the name has now dropped completely out of use. Pop., 1901, 26,850; 1911, 26,713. Consult *Guide to and History of Leamington* (New York, 1888).

LEAMINGTON. A town and port in Essex Co., Ontario, Canada, on Lake Erie and on the Michigan Central and Père Marquette railways, 30 miles southeast by east (direct) of Windsor (Map: Ontario, B 9). There is an electric railway to Windsor and steamship communication with Pelee Island. The town possesses a public library. The manufacturing industries include milling, fruit canning, pickle making, cigar, and basket making. There are also manufactures of handles, catsup, sashes, and doors. Natural gas is found in the vicinity. There are two tobacco factories and a considerable trade in that product. The town owns its water works. Pop., 1901, 2451; 1911, 2652.

LEANDER, lē-ān'dēr. See HERO.

LEANDER. See ESS, JOHANN HEINRICH VAN.

LEANDER, lē-ān'dēr, RICHARD. The pseudonym of the German surgeon and author Richard von Volkmann (q.v.).

LEANDER, SAINT (c.550-c.601). Archbishop of Seville. He was born at Cartagena, Spain, and became a monk. His zeal in converting the son and successor of King Leovigild was punished by banishment. He betook himself to Constantinople and there formed a lasting friendship with Gregory, afterward Pope Gregory the Great (590-604). About 584 Leander was made Archbishop of Seville, and in 599 Gregory sent him the pallium and also dedicated to him his *Moralia in Jobum*. Leander's most important achievement was the conversion of the West Goths from Arianism to Catholic Christianity. His day is March 13.

LEANDER CLARK COLLEGE. See WESTERN COLLEGE.

LÉANDRE, lē-ān'dr', CHARLES LUCIEN

(1862-). A French portrait painter, pastellist, lithographer, and caricaturist. He was born at Champsecret (Orne) and studied under Bin and Cabanel in Paris. He began as a drawing teacher and portrait painter. Becoming associated in 1894 with the periodical *Le Rire*, he immediately made a name by his excellently drawn, good-natured, humorous caricature portraits and sketches. He later acquired more solid fame with his pastel portraits, which for delicate and precise draftsmanship, bold and harmonious color, fineness of texture, and dazzling flesh tints are unrivaled in contemporary art. His lithographs, which are models of technical ability, also deserve special mention. They are executed usually in black and white, with great depth, yet with an airy lightness of tone and a bold treatment of light and shade. Among the best known are "Yvette Guilbert's Tour"; "The Snobs"; "Souvenir of the First Communion" (1904); "The Woman with the Monkey"; "Ball in the Days of Henri Monnier" (1905). Among the works illustrated by him are Rostand's *Cyrano de Bergerac* (1900) and Murger's *Vie de Bohème* (1903). In 1896 he published an album of delightful sketches entitled *Nocturnes*. He became Chevalier of the Legion of Honor and received gold medals in 1891 and 1907.

LEANING TOWER. A tower which overhangs its base on one side. The most celebrated example is the campanile of Pisa, which has an obliquity of 13 feet in a height of 179. It was begun by the architect Bonannus of Pisa in 1174, continued by William of Innsbruck and others, and completed in 1350. It is built in the Romanesque style, to correspond with the cathedral, and is surrounded by open arcades of columns. Other well-known examples are in Bologna, the Torre Asinelli (1109) and the Torre Garisenda (1110), both square and built of brick, the latter well known through a passage in Dante's *Inferno*. The original campanile of Venice also leaned slightly; there are other examples at Pisa, Ravenna, and elsewhere in northern Italy, and a few in other parts of Europe. It has long been disputed whether the slant of these towers is accidental. That of Pisa shows an increased height in each successive story on the leaning side, which has been attributed by some (Rohault de Fleury, Mothes) to attempts of the architects to rectify a sinking while the tower was being built. Others (Grassi, Ricci, Goodyear) have advanced arguments to show that the slant here and elsewhere was intentional. The latter is the prevailing opinion. Consult: Russell Sturgis, *Dictionary of Architecture* (New York, 1905); W. H. Goodyear, "Brooklyn Museum Measurements of 1910 in the Spiral Stairway of the Leaning Tower," in *American Architect*, vol. xcvi (ib., 1910); id., *Analysis of the Report of the Pisa Commission on the Leaning Tower* (ib., 1910). For illustration, see PISA.

LEAPING FISH. See MUDSKIPPER.

LEAP INSECT. See LEEP INSECT.

LEAP YEAR. A year of 366 days (see CALENDAR), so called because it leaps forward a day as compared with an ordinary year. For convenience the leap years are chosen to be those in which the number of the year is divisible by four without remainder; but, of the years divisible by 100, only those are leap years which are divisible by 400. See BISSEXTILE.

LEAR, EDWARD (1812-88). An English artist and writer of verse, born at Holloway, Lon-

don, May 12, 1812. He was of Danish descent. As a boy, he showed a liking for painting and natural history; at the age of 19 he found employment as draftsman in the Zoological Gardens; and a year later a book of his ornithological drawings attracted the attention of the Earl of Derby, for whom he drew the plates to *The Knowsley Menagerie*. He traveled extensively on the Continent and in the East, filling his books with drawings. He settled in Italy and died at San Remo, January, 1888. It was for the young son of the Earl of Derby, in whose family Lear became a permanent favorite, that his first nonsense book was written (1846). There followed: *Nonsense Songs* (1871); *More Nonsense Songs* (1872); *Laughable Lyrics* (1877). The fame of his humorous books, with their preposterously comic illustrations, quite surpassed that of his serious productions, which, from pen or pencil, or both, include: *Illustrations of the Family of the Psittacidae* (1832); *Gleanings from the Menagerie at Knowsley Hall* (1846); and the journals of travel in Italy (1846), Greece and Albania (1851), the Ionian Islands (1863), and Corsica (1870). In 1912 appeared the *Complete Nonsense Book* (New York), which brings together all the original nonsense pictures and nonsense verses and adds new material. Consult: Tennyson's *Poems*, illustrated by Lear, with memoir by Lushington (London, 1889); *Letters of Edward Lear* (New York, 1908), *Later Letters of Edward Lear* (ib., 1911).

LEAR, TOBIAS (1762-1816). An American diplomatist, born at Portsmouth, N. H. In 1783 he graduated at Harvard and in 1785 was appointed private secretary to Washington, in which position he remained until Washington's death. From 1802 to 1804 he was Consul General at Santo Domingo and in the latter year became Consul General at Algiers. He was appointed in 1805 to conclude a peace with Tripoli and despite sharp censure from some quarters arranged terms approved throughout by the United States government. Subsequently he was connected with the War Department at Washington as an accountant until his death by suicide.

LEARMONT, lër'mönt, THOMAS. See THOMAS OF ERCELDOUNE.

LEARNED, lër'néd, MARION DEXTER (1857-). An American Germanic scholar, born near Dover, Del. He graduated in 1880 from Dickinson College, was instructor in languages at Dickinson Seminary in 1880-84, studied in Germany in 1885, and graduated Ph.D. in 1887 from Johns Hopkins University, where he was instructor, associate, and associate professor of German from 1886 to 1895. Thereafter he served as professor of German at the University of Pennsylvania. He became editor of *Americana Germanica* (now *German American Annals*) in 1897, made researches for the Carnegie Institution in 1909, and was president of the Modern Language Association in 1909. He published: *The Pennsylvania German Dialect* (1889); *The Saga of Walther of Aquitaine* (1892); *Herder and America* (1904); *The Life of Francis Daniel Postorius* (1908); *The Family of Abraham Lincoln* (1909); *Guide to the MS. Materials Relating to American History in the German State Archives* (1912).

LEARNING. In general, the modification of behavior in the light of experience. If an organism lived always under the same condi-

tions, learning would be unnecessary. If, however, new conditions arise to which the present behavior of the organism is inadequate, and if the animal is able to adjust itself to these new conditions, then it has "learned"; the process of adjustment is the process of learning.

The study of learning is important for two reasons. 1. Since the behavior of the learning organism has a conscious aspect, its study gives an index to the nature of consciousness. (See PSYCHOLOGY; ANIMAL PSYCHOLOGY.) The problem of psychology, therefore, is to describe the mental processes which are present at various stages in learning and to correlate these processes with changes in the nervous system (See LEARNING IN ANIMALS.) Here we find, to be sure, a number of special syntheses, but nothing essentially new; the general psychology of learning is the psychology of perception and idea, of meaning, of memory, of language, of attention, of action; and the explanation of the learning process is likewise to be couched in terms of associative and determining tendencies. 2. Man, unlike the lower animals, anticipates changes in the environment; he is able, in a measure, to make the necessary adjustments before a change in conditions actually arises, for the human individual possesses free ideas. It is the business of education to anticipate these changes and adjustments and to prepare the individual to meet new situations when they arise. Educational technology is therefore interested primarily in such problems as the methods and economy of learning, the relation of learning to intelligence, to mental fatigue, etc. The methods of learning, e.g., may be reduced to three.

(1) the method of trial and success (trial and error, perseverance), in which one means after another is tried until the organism hits upon an adjustment that is effective; (2) the method of imitation, the intentional or unintentional copying of the behavior of one or more individuals (see IMITATION); and (3) the employment of free ideas: since man is endowed with memory and imagination, he can recall procedures which were effective in a former situation and can adapt and apply them to situations which are partly different. The first of these methods is the least economical, because it involves waste of time and effort; the second is economical, provided that the "copy" is adequate; the efficiency of the third, which characterizes the highest type of learning, is largely dependent upon the intelligence of the learner. There are also certain rules which must be followed if the best results are to be obtained. Thus, it is a cardinal rule of all such learning that attention must be given to the work in hand. Again, the committing to memory of any material is, in the last analysis, a function of the number of repetitions; but it is better to learn by wholes than by parts, and it is better to distribute the study over several periods than to confine it to one period. Again, learning is facilitated by frequent attempts to recall or recite the matter being learned.

For the relation of learning to intelligence, see MENTAL TESTS. For the relation of fatigue to learning, see FATIGUE. For muscular learning, or the development of skill, see HABIT.

Consult: C. H. Judd, *Genetic Psychology for Teachers* (New York, 1903); E. G. Swift, *Mind in the Making* (ib., 1909); S. S. Colvin, *The Learning Process* (ib., 1911); Ernst Meumann, *The Psychology of Learning*, translated by J. W.

Baird (ib., 1913); Colvin and Bagley, *Human Behavior* (ib., 1913).

LEARNING IN ANIMALS. The modification of the behavior of an animal organism by its previous experience. The modification must be comparatively rapid, since learning has a conscious aspect. (See ANIMAL PSYCHOLOGY.) In the study of the human mind interest is likely to centre in the alteration of consciousness correlated with the change in behavior; the animal psychologist, however, although his ultimate end is the same, must first concern himself intimately with behavior itself; so that his classifications of learning are usually made with reference rather to modification of behavior than to indicated changes in the accompanying consciousness.

1. Learning as the cessation of response to repeated weak stimulation occurs in the lowest animal forms. *Hydra* responds to weak mechanical shock by contraction, but upon continued repetition of the stimulus ceases to react. Sea urchins may respond only to the first of a series of shadows. Acquired behavior of this sort is seldom permanent; after an interval without stimulation the animal will again give its original response; and the learning may be dependent solely upon sensory adaptation.

2. The change in behavior under repeated stimulation may consist of a heightened reaction. Thus, the avoiding reaction of an earthworm may, after the animal has been continuously prodded, become so exaggerated that the creature whips its head rapidly about. This type of learning is also of short duration and may be due to a summation of nervous impulses.

3. Continued strong (and probably injurious) stimulation may result in a succession of varied negative responses. The animal appears to try various means of ridding itself of the stimulus, until at last it is successful. We are told that a starfish which had a piece of rubber tubing placed over one of its arms tried to remove the object in the following ways: "rubbing it off against the ground, shaking it off by holding the arm aloft and waving it pendulum-wise in the air, holding the tube against the ground with the neighboring arm and pulling the afflicted arm out, pressing other arms against the tube and pushing it off, and, finally, as a last resort, amputating the arm." Learning of this sort is never permanent and is probably due to the overflow of increased nervous excitation into other than the usual channels.

4. The acquisition of rhythmic habits is, perhaps, a distinct form of learning. The sea anemone, which expands its tentacles at high tide, will continue to do so at the regular tidal intervals for some time after it has been removed to an aquarium. If a new artificial rhythm, like that of the tide, is established in the aquarium, the creature will fall into the new rhythm and continue to open out its tentacles at the rate of the newly established intervals, even after the artificial tide has ceased.

5. In the homing behavior of certain animals (e.g., ants, bees, solitary wasps, many vertebrates) the creature seems to learn its path to a new home with remarkable rapidity. It is difficult to say whether the mechanism of learning, in the case of homing, is exceptional. Various suggestions have been made: guidance by visual landmarks, by the general direction of the light, by the olfactory trail laid down when the animal left the nest (a topochemical or olfac-

tory space perception of the direction of the footprint has been supposed in the case of ants), by general kinesthetic memory of the movements made on leaving the nest, by a special kinesthetic "sense of own-direction." The learning of the homeward route is instinctive and might be based upon any one or more of the factors mentioned.

6. The dropping of the useless or injurious movements involved in a complex response to stimulus may constitute learning. Here the methods of the maze and of the puzzle box have been extensively used for study. The animal is called upon to find its way through a labyrinth; or its task is to operate a series of levers, catches, strings, or similar mechanisms in a given way and in a given succession, in order that it may open the door of a box. In both cases the animal must be provided with a motive, which is generally the satisfaction of hunger or the avoidance of pain or some form of discomfort. Relief is gained by the animal when it has passed through the maze, or when it leaves or enters the puzzle box. Sometimes a wrong movement, such as the following of a wrong course in the maze, is punished by an electric shock or other unpleasant stimulus. The results of experimental work show that learning by the dropping of merely useless movements is slow and gradual; learning by the elimination of harmful or painful movements is much more rapid.

Learning in the present sense is a simplification of behavior. Oftentimes, however, the simplification is accompanied by the addition of some necessary movement. Thus *Paramecium*, when trapped at the end of a very thin column of water from which it cannot escape by its usual turning movement, after a number of trials abandons its usual reaction, and turns by bending its body sharply to one side. The simplification of behavior in this type of learning may thus, it appears, involve the inhibition of instinctive movements.

For the animal consciousness under the typical conditions of maze learning, see KINÆSTHETIC SENSATIONS IN ANIMALS.

7. Another type of learning is based upon associative memory (Loeb). Here the animal, instead of reacting to the usual stimulus, reacts to a second stimulus which has been regularly connected therewith. Pawlow, e.g., tests the formation of associations in animals by measuring the flow of saliva. The salivary flow is a response of the animal to the taste of food; but when some other stimulus (e.g., a color) is repeatedly presented in connection with the food, the flow may occur as soon as the animal perceives this associated stimulus. The strength of the association is then measured by the number of drops of saliva. Another investigator arranged to give an earthworm, crawling through a tunnel, an electric shock just after it had passed over a piece of sandpaper. At first the worm turned back only when it felt the shock, but later it learned to turn as soon as it reached the sandpaper. Yet another example is that of the kitten, whose response to the smell of food came presently to be given to the sound of the dinner bell.

8. The highest form of learning involves the presence of memory ideas. It is frequent in the human subject, but occurs rarely, if ever, in animals. See IMITATION IN ANIMALS; MEMORY IN ANIMALS.

For the significance of learning as an index of mind, see ANIMAL PSYCHOLOGY, and consult the general texts in the bibliography of that article.

LEASE. The act or instrument whereby any estate in land less than a fee is created. In its most extended sense the term thus includes the conveyance of a life estate as well as the agreement which results in a tenancy for years, at will or from year to year. More frequently, however, it is applied to the writing (not usually a deed) or the parol declaration creating an estate for years, or leasehold, as it is technically called. Formerly all leases, excepting leases for life (which required the same ceremonial as was requisite for the conveyance of a fee), were effected by parol. But the Statute of Frauds, passed in the twenty-ninth year of Charles II (1678), made a writing essential to the validity of all leases for terms exceeding three years. This provision has in many of the United States been modified by statutes requiring leases for more than one year to be in writing.

The immediate effect of a lease for years is to vest in the lessee an interest in the land, known technically as an *interesse terminum*, which has many of the characteristics of a leasehold estate, but which requires the entry of the lessee upon the land to make his title as tenant complete. Once in possession the lessee becomes the virtual owner of the premises for the period of his lease; he has a true estate in the land, which he can defend against the lessor as well as against the rest of the world, and which is limited only by the rules of law governing the relations of landlord and tenant.

As thus understood, a lease is a simple conveyance having no other effect than the creation of the bare property relation of landlord and tenant. The instrument by which the lease is effected may, however, include a variety of collateral agreements on the part of the lessor or the lessee, or both, creating contract relations between them in addition to the property relations. Of this nature are the usual stipulations of the lessee to pay a fixed rent, to keep the premises in repair, to make no assignment of the lease, or, on the part of the lessor, to grant a renewal of the lease, to pay for improvements at the expiration of the term, and the like. These agreements, if the instrument be under seal, become incorporated in the leasehold estate and, as the expression is, run with the land, binding successors of the lessor and lessee respectively as well as the original parties to the transaction.

It should be noticed, however, that a formal and valid lease is not necessary in all cases to create the relation of landlord and tenant. This may arise, as a tenancy at will or from year to year, by the entry of a tenant under a void lease, or, like a tenancy at sufferance, by the continued occupation without authority of a tenant whose lawful term has expired. Nor is it necessary that a lease shall specify all the obligations of the parties thereto. The most important of these, as the obligation of the landlord to defend his tenant's title, and the tenant's liability for waste and repairs, are the legal incidents of the relation of landlord and tenant and exist without reference to the terms of the lease. See ESTATE; LEASEHOLD; LANDLORD AND TENANT, and consult the authorities referred to under the last of these and under REAL PROPERTY.

LEASE AND RELEASE. An old form of conveyance of land. It had its origin in the practice of leasing land to a tenant for a term, as one year, and then, after his entry upon the land and during his term, releasing the reversion, or estate of the landlord, to him by a deed. The two transactions together had the effect of transferring the entire freehold estate of the grantor, which otherwise could be effected only by the inconvenient and public process of feoffment (q.v.), or livery of seisin (q.v.). It had the advantage over the latter of being a secret conveyance, but was subject to the disadvantage of requiring the actual entry of the tenant upon the land before he became capable of taking the reversion by the deed of release. This difficulty was obviated by the construction put by the courts upon the famous Statute of Uses (27 Hen. VIII, c. 10), which permitted the creation of a complete leasehold estate without the necessity of an entry by the tenant, by the device of conveying the land to his "use" for a year. The statute in question, by executing the use, i.e., by transferring to the tenant a legal title coextensive with his use, or equitable title, vested the possession in him and thus rendered him instantly capable of taking the landlord's estate by release. The two instruments of lease and of release could thus be executed in quick succession, and, later, the two acts became simultaneous and were merged in one and the same instrument. This process of lease and release was the usual mode of conveyance in England for 300 years and prevailed in the United States as well, until superseded by the simpler conveyance by deed of grant, which is now in vogue in both countries. See DEED; GRANT; CONVEYANCE.

LEASE/HOLD. In English law, the technical description of an estate for years. It arises upon a lease and constitutes a valid title, or estate, in the premises for the period described. It may be for any period of time, however brief or long, whether for a week or for 1000 years, and is subject to no restriction excepting that the limit of its duration shall be definitely fixed. If an estate in land be for an indefinite period, it is not a leasehold, even though it be measured in years.

Owing to the circumstances of its origin, the leasehold estate is classified as personal property, which, upon the death of the tenant or leaseholder, passes to his executor or administrator, and not, like real property, to his heir. Anciently such an interest was not regarded as property at all (the feudal conception of estates in land being confined to the class of interests known as freeholds), but as a mere contract right, enforceable only against the lessor or owner of the land, and against him only by an action for damages. But in the course of time, partly as the result of statutes and partly through a growing recognition of the importance of leasehold interests, the lessee came to be protected by a variety of actions, of which the action of ejectment was the most important, whereby he might recover the land itself either from his lessor or from any other intruder. The right of the lessee thus became a true estate in the land, strictly analogous to the freehold estates previously recognized, but it was now too late to secure its recognition as inheritable real property. As the right of action for breach of contract, which was all that the lessee formerly had, passed to his executor, so the leasehold estate which developed out of that contract right has

continued to do to the present time. It is distinguished from other personal property by the phrase "chattel real."

This contract origin of the leasehold is responsible, also, for some of the advantages which it enjoys over the freehold. Not only may it be created and assigned with less difficulty and formality, as by parol or, at the most, by a simple writing, while a deed is requisite to the creation or transfer of a freehold; but it has always been capable of being created so as to take effect at a future time, which in the case of freeholds was not possible at the common law.

Technically the proper mode of creating an estate for years is by a lease, or demise, followed by the entry of the lessee. Any form of words showing the intention to create the relation of landlord and tenant will suffice. See ESTATE, FREEHOLD; LANDLORD AND TENANT; LEASE.

LEAST SQUARES, METHOD OF. An application of the theory of probabilities (q.v.) to the deduction of the most probable value from a number of observations, each of which is liable to certain accidental errors. The methods by which this is done may be understood from a single example. Let it be found that a given bar has, at the temperatures of 20°, 40°, 50°, and 60° C., respectively, the lengths 1000.22, 1000.65, 1000.90, and 1001.05 millimeters; and let it be required to ascertain the coefficient of linear expansion, i.e., the amount of linear expansion per degree of temperature. If l_0 denotes the length of the bar at a temperature of 0° C., c the coefficient of linear expansion, and l_t the length of the bar at t ° C., then $l_0 + t \cdot c = l_t$. Substituting respectively 20, 40, 50, and 60 for t , and the corresponding values of l_t , we get four equations, as follows:

- (1) $l_0 + 20c = 1000.22$
- (2) $l_0 + 40c = 1000.65$
- (3) $l_0 + 50c = 1000.90$
- (4) $l_0 + 60c = 1001.05$

Solving equations (1) and (2) for l_0 and c , we obtain $l_0 = 999.79$, and $c = 0.215$. But if these values of l_0 and c are then substituted in equations (3) and (4), we find, respectively, $l_{50} = 1000.87$, $l_{60} = 1001.08$, instead of the experimental figures 1000.90 and 1001.05. The difference between the 1000.87 and the 1000.90, — 0.03, is called the residual of equation (3), while + 0.03 is obviously the residual of equation (4).

In the same way we might solve equations (1) and (4) and obtain $l_0 = 999.80$, $c = 0.0208$, in which case the residuals of equations (2) and (3) would be + 0.02, + 0.06. Other combinations of the given equations would give other residuals, and the smaller the residuals the closer the probable approximation. It can be shown analytically and experimentally that in a series of observations affected by accidental errors, errors whose law of recurrence is such that in the long run they are as often positive as negative, the number of errors of a given magnitude is a function of that magnitude. This particular function is

$$f(x) = h\pi^{-1}e^{-x^2},$$

where h is a constant for all observations of a series, and π and e have their usual meanings. The distribution of residuals follows this law, which is represented graphically by the curve

$$y = h\pi^{-1}e^{-x^2}.$$

If $\sigma = 0$, $y = h\sigma^{-1}$, and therefore varies directly as h ; but as σ becomes very large, y becomes very small. That is, the number of errors of very small magnitude is relatively large, and the number of errors of very large magnitude is small. It has further been found that the sum of the squares of the residuals, Σx^2 , varies inversely as h , and hence, when h is largest, Σx^2 is smallest; in other words, that the most probable values of the unknowns are those which make Σx^2 a minimum. From this is derived the name *Method of Least Squares*.

For example, suppose a circumference, σ , bisected by a diameter, is measured and found to be c , and the two semicircumferences are also measured and found to be s_1 , s_2 , and we are required to find the most probable value of σ . The residuals are $c - \sigma$, $s_1 - \frac{1}{2}\sigma$, $s_2 - \frac{1}{2}\sigma$. Hence, assuming only accidental errors,
 $f(x) = (c - x)^2 + (s_1 - \frac{1}{2}x)^2 + (s_2 - \frac{1}{2}x)^2 = \text{a minimum,}$
 or $f'(x) = 2(x - c) + \frac{1}{2}x - s_1 + \frac{1}{2}x - s_2 = 0$,
 whence $x = \frac{1}{2}(2c + s_1 + s_2)$,
 the most probable value.

The publication of the method of least squares is due to Legendre (1805), who introduced it in his *Nouvelles méthodes pour la détermination des orbites des comètes*. In ignorance of Legendre's contribution, however, an Irish-American writer, Robert Adrain (q.v.), editor of the *Analyst* (1808) and professor of mathematics in Columbia College, first deduced the law. He gave two proofs, the second being essentially the same as Herschel's (1851). Gauss seems to have had the idea very early, and he gave the first proof which seems to have been known in Europe (the third after Adrain's), but this did not appear until 1809. To him is due much of the honor of placing the subject before the mathematical world, both as to the theory and its applications.

Bibliography. Mansfield Merriam, *Text-Book on the Method of Least Squares* (4th ed., New York, 1888); G. C. Comstock, *Method of Least Squares* (Boston, 1890); W. W. Johnson, *Theory of Errors and the Method of Least Squares* (New York, 1892); D. P. Bartlett, *General Principles of the Method of Least Squares* (Boston, 1900); C. L. Crandall, *Text-Book on Geodesy and Least Squares* (New York, 1907); E. L. Ingram, *Geodetic Surveying and the Adjustment of Observations* (ib., 1911); E. L. Dodd, *The Least Square Method Grounded with the Aid of an Orthogonal Transformation* (Leipzig, 1912).

LEATHER (AS. *leþer*, OHG. *leder*, Ger. *Leder*, leather). The skin of an animal, dressed for use by some process which shall render its texture permanent in character. Untreated fresh skin is easily putrescible, dry skin is hard and horny and almost impenetrable to air. By converting a skin into leather, however, its nature is entirely changed and it is rendered practically imperishable, porous, and flexible. It differs from the untanned hide in having greater or less permeability to water and toughness and strength. The hide of an animal consists of three layers: the outer or epidermis, which has no blood vessels and is hard and horny, the inner true skin or corium, which is made up of gelatinous fibres; and the fatty under tissue in which the perspiratory and sebaceous glands are embedded. The inner layer or true skin, the corium, is the basis of leather, as the other portions are removed in the early processes of tanning; and the process of leather making consists of applying to this skin certain substances

which shall enter into combination with the gelatin in such a manner as to produce the desired characteristics of durability, penetrability, and flexibility. Three methods of accomplishing this have been practiced from very early times: *tanning*, in which the gelatin is combined with tannin or tannic acid, or, by a much later process, with chromium salts; *tawing*, in which the gelatin is combined with certain mineral salts, chiefly those of alumina; *chamoising*, in which the leather is combined with oil or fatty substances.

Historical Development. Probably the original process of curing skins was that of simply cleaning and drying. Then the use of smoke, sour milk, various oils, and the brains of the animals themselves, was found to improve the texture of the leather. Later it was discovered that certain astringent barks and vegetables effected permanent changes in the texture of skins and stopped decay. This knowledge was possessed by the ancient Egyptians, for engravings on their tombs depict the process of tanning. In China specimens of leather have been discovered in company with other relics that prove them to be over 3000 years old. The Romans used leather which they tanned with oil, alum, and bark. The earliest explorers of America found the Indians wearing skins prepared with buffalo dung, oil, and clay. No improvement in the general methods of preparing leather took place from the most primitive times until about 1790, when the use of lime, to loosen the hair, was introduced. By 1825 English tanners were attempting to introduce new methods by which the tanning process could be shortened. One of the pioneers in these experiments was John Burridge, the inventor of the barkometer, an instrument for determining the strength of tanning liquors.

Tanning Industry in the United States. The first tannery in America was built in Virginia in 1630. A few years later a second one was established in Lynn, Mass. The tanning industry was well represented among the early settlers of Massachusetts, for it is recorded that no fewer than 51 tanners had come over to the new Colony before 1650. There was great demand for their labors, for skins accumulated so rapidly that in 1640 it was found necessary to pass a law "that every hide and skin should be dried before it corrupts, and sent where they may be tanned and dressed." The tanning industry was also encouraged throughout the Colonies by many laws forbidding the exportation of untanned leather. Tanneries flourished everywhere, and by 1810 their annual output was \$20,000,000. See paragraph *Statistics*.

Manufacturing Processes. The hides of commerce are brought to the tanneries in four different forms: either they are simply "green" or "fresh" hides, direct from the slaughterhouses, or, in case they have been shipped from a long distance, as is the case with hides coming to the United States from South America or to England from India, Australia, and Africa, as well as South America, they are wet-salted, dry-salted, or simply dried. The preliminary process of preparing the hides for tanning differs somewhat with the condition in which they are received, salted and dried hides requiring much more thorough cleansing and softening than green hides. The process also differs somewhat in preparing sole leather, harness leather, and shoe leather. The first step is to soak the

skins or hides in water, to soften them, after which every vestige of adherent flesh is scraped from the inside. They are then laid in heaps for a short time and afterward hung in a heated room, by which means a slight putrefactive decomposition is started and the hair becomes so loose as to be easily detached. This process of unhairing, called "sweating," is mostly followed in America for making sole leathers, while the process of *liming* or loosening the roots by the milk of lime is used for dressed leather, but in Great Britain milk of lime is used for depilation of all leathers. The process may be hastened by use of sulphuric or other acid. Hides or skins intended for dressing purposes, as for shoes, upholstery, harness, or bookbinding, after the hair is taken off by the lime, have to be submitted to a process called *bating* for the purpose of reducing the swelling or thickening occasioned by the introduction of the lime and for cleansing the skin from grease and other impurities. This is effected by working the skin in a decoction of pigeon's or dog's dung and warm water. This process does something more than cleanse the leather; it effects a marked change in its texture, reducing it to an extremely flaccid condition. If the old method of tanning is followed, the hides after unhairing are placed in the tan pits, with layers of oak bark or other tanning materials between them, and when as many layers of hides and bark are arranged as the pit will hold, water is let in, and the hides are allowed to remain for an indefinite period to be acted on by the tanning material. Various means for shortening this process have been devised, such as forcing the tanning liquor through the skin by pressure, sewing the skins together into a bag in which the liquor is suspended, and simply substituting for the dry bark which was formerly used liquid infusions or extracts of tanning materials, which are gradually increased in concentration as the process advances. The last-named method, though the slowest, is found to produce the best leather, and the process of tanning is still a tedious one, consuming weeks or even months. The general method employed in American tanneries is described by Sadtler as follows:

"The tan house into which the cleansed and prepared hides or 'butts' now come is provided with rows of pits running in parallel lines, which are to contain the butts during their treatment with the tan liquor. The butts in most cases are first suspended in weak tanning infusions before they go into the first, or 'handler,' pits. The object of this is to insure the uniform absorption of tannin by the skins, before subjecting them to the rough usage of 'handling,' which in the early stages of the process is liable to cause injury to the delicate structure of the skin. During this suspension the skins should be in continuous agitation to cause the tannin to be taken up evenly. Both the suspension and the agitation are accomplished generally by mechanical means. From the suspenders the butts are transferred to the 'handlers,' where they are laid flat in the liquor. They are here treated with weak infusion of bark, commencing at about 15° to 20° by the barkometer, and are handled twice a day during the first two or three days. This may be done by taking them out, turning them over, and returning them to the same pit, or more generally by running them, fastened together, from one handler pit to another. The treatment of the butts in the handlers generally

occupies about six to eight weeks, by which time the coloring matter of the bark and the tannin should have 'struck' through about one-third of the substance of the skin. Many of the butts will have become covered, moreover, with a peculiar 'bloom' (ellagic acid) insoluble in water. They are now removed to the 'layers,' in which they receive the treatment of bark and 'ooze' or tan liquor in progressive stages until the tanning is complete. Here the butts are stratified with ground oak bark or valonia, which is spread between each butt to the depth of about one inch, and a thicker layer finally on top. The pit is then filled up with ooze, which varies in strength from about 35° barkometer at the beginning to 70° at the end of the treatment. For heavy tanning six to eight layers are required, the duration of each ranging from 10 days in the beginning to a month in the later stages. Each time the butts are raised they should be mopped on the grain to remove dirt and loose bloom."

Many materials besides oak bark are now used to make tanning infusions, and some of these, being stronger, have hastened the tanning process. Among the most important of these are valonia, the acorn of an evergreen oak found in Asia Minor and Greece, which contains three times as much tannin as the strongest oak bark; the sumach; the divi-divi and algarovilla, pods of South American trees closely allied to logwood; and the larch, spruce, pine, and hemlock barks. Besides this group there are the tanning materials derived from abnormal growths, caused by the sting of insects or other injuries, as galls (q.v.) and knoppers. The so-called "union" tannage is produced by a combination of oak and hemlock barks. Many of the tanning materials come into commerce at present in the form of manufactured extracts which can be readily and cheaply shipped to the tanneries wherever located. Liquid extracts such as hemlock and chestnut extracts frequently contain notable amounts of difficultly soluble sediments known as "phlobaphemes" or "reds," which are the anhydrides of the tannic acids. These should not be discarded, as they have notable tanning power and are gradually absorbed by the skins, going into solution and becoming effective tanning agents. Solid and pasty extracts such as those of quebracho, cutch, and gambier are dissolved for use with the aid of moderate heat.

Undressed leather, after it is tanned, needs simply to be rendered smooth and compact, which is accomplished by scouring and compressing the surface with stones, brushes, the "striking pin," and rollers, all of which processes are effected by machinery. Dressed leathers must, in addition, be "stuffed" with oils to increase their resistance to water and their flexibility; they must frequently be dyed or stained in black or colors and "grained." These processes are also performed by machinery. In 1860 a machine was invented for splitting leather to any desired degree of thinness. The practice previously was to shave the leather down, the shavings being wasted. The process of dressing tanned leather known as currying was formerly a separate industry, but is now carried on as a part of the general business of leather manufacture. A favorite oil used by curriers for stuffing leather is the degrass, or superfluous oil pressed from chamoised leather. The demand for this oil is so great that its manufacture has recently become a separate industry.

Chrome Tanning. The possibility of tanning by the use of chromium compounds, instead of the older tanning materials, was discovered as early as 1856 by the German Knapp, but the first process which attained commercial success was invented in 1884 by Augustus Schultz. The introduction of this process in Philadelphia caused it to become at once a great leather-manufacturing centre. Chrome tanning consumes only a few hours, as compared with weeks or months required by the older method, and it produces a leather which is extremely soft and pliable, of close texture, and thoroughly resistant to water. At the present time two-thirds of the glazed kid made in the United States is chrome-tanned, but the process has not been applied successfully to sole leather. The process consists in treating the skins at first with a weak solution of bichromate of potash, to which sufficient hydrochloric acid is added to liberate the chromic acid. Of course pickled skins may be used without the necessity of adding free acid. After the skins have taken up a bright-yellow color through their entire texture they are drained and transferred to a bath of hyposulphite of soda, to which hydrochloric acid is added to liberate sulphurous acid, which reduces the chromic acid to green chromic oxide. The sulphurous acid is at the same time oxidized to sulphuric acid, until the whole of the chromic acid is reduced. The leather so produced is of a pale-bluish-green color. The combination of the hide fibre, or corium, with the chromium oxide is apparently more stable than its combination with tannin and yields less to boiling water. The leather can also be dyed successfully if the dye is applied while the skin is still moist, but so great is its water-repellent character that, once dried, it cannot be wetted sufficiently to dye properly.

Tawing consists either in dressing the skins in antiseptic materials, so as to preserve them from decay, or treating them with salts that fasten upon the fibre and prevent them from agglutinating and so drying as a horny mass. By this operation, however, no chemical change is effected in the gelatin of the skin; hence scraps and other wastes of tawed leathers can be used in the manufacture of glue. The preliminary process of cleansing and depiling is performed as for skins that are to be tanned, except that the lime must be very thoroughly removed before the use of the aluminium salt. After thorough cleansing the pelts are steeped in a pit filled with lime and water, being taken out from time to time and drained on sloping benches. When removed finally from the lime pit, the skins are worked with the knife, to render them more supple, and are then put into the branning mixture. This consists of bran and water in the proportion of two pounds of bran to a gallon of water. From this mixture they are transferred to an alum and salt bath in a wooden tumbler or drum. For every 200 skins some 12 pounds of alum and $2\frac{1}{2}$ pounds of salt, with 12 gallons of water, are used. After remaining in this mixture about five minutes they undergo what is called pasting. The paste is a mixture of wheaten bran and sometimes flour and the yolk of eggs, which the leather almost completely absorbs. Lastly the skins are dried and examined and, if satisfactory, are dipped into pure water and worked or staked by pulling them backward and forward on what is called a stretching and softening iron. They are then allowed to "age"

for from one to three months and prepared for finishing. For this they are thoroughly wetted, which has the effect of removing superfluous alum and salt and much of the flour and egg. It becomes necessary therefore at this stage to "re-egg" the skins to give them proper body preparatory to dyeing or finishing.

For black glove leather these alum-tanned skins are given first an alkaline mordant (sometimes stale urine) and then dyed with logwood infusion applied by brushing over the skins several times. This color is fixed and darkened by a wash of sulphate of iron solution. Tanning by electricity has also been proposed, and several processes have been invented, but have not been prosecuted with any marked success.

Chamoising is effected by treating the skin with oil. After the skins have been thoroughly cleansed with lime, and then by a bran drench to remove the lime, they, while still wet, are oiled with fish, seal, or whale oil to which a slight amount of carbolic acid is sometimes added. The oil works into the skin, displaces all the water, and becomes united with the material, rendering its texture peculiarly soft and spongy. Wash leather or chamois leather is so prepared, and for this purpose the flesh halves of split sheepskin are chiefly used.

The skins which form the staple of leather manufacture are those of the ox, cow, calf, buffalo, horse, sheep, lamb, goat, kid, deer, dog, seal, hog, walrus, kangaroo, and alligator. The term *pelt* is applied to all skins before they are converted into leather. When simply made into leather in the state we find in shoe soles, it is called *rough leather*; but if in addition it is submitted to the process of currying, it is called *dressed leather*. *Hides* are the skins of large animals, as horses, cows, and oxen. The complete hides when rounded, with the cheeks, shank, etc., cut off, are called *butts*; the pieces cut off constitute the offal. *Skins* are all the lighter forms of leather, as sheep, goat, deer, including the skins of fur-bearing animals in which the fur is retained. *Kips* are the skins of yearlings and animals larger than calves. Alligator leather is chiefly used for small fancy articles. Only the skins of young alligators are used, and of these the backs are thrown away as too horny. Walrus and hippopotamus hides are tanned in considerable numbers for the use of cutlers and other workers in steel goods; buffing wheels are made of them, often an inch thick, which are of great importance in giving the polish to metals and horn goods. Hogskins are used for the manufacture of saddles and fancy articles. Dogskins are used for gloves. The "grain leather" of commerce is leather that has been made from the hides of neat cattle, split so thin by the splitting machine as to be suitable for the same uses as are goat, calf, and various other skins which it is made to imitate.

Morocco leather, formerly an article of import from the Barbary coast, is now prepared in the United States. Sheepskins are also used for it. It is always dyed on the outer or grain side with some color, and the leather dresser in finishing gives a peculiar ribbed or a roughly granulated surface to it by means of engraved boxwood balls which he works over the surface. Morocco has been largely superseded by glazed kid.

Russia leather is much valued for its aromatic odor, which it derives from the peculiar oil of the birch bark used in currying it. The fact that

this odor repels moths and other insects renders this leather particularly valuable for binding books; a few books bound in Russia leather being effective safeguards against insect enemies in a library. It is also said to destroy or prevent the vegetable evil called mildew, to which books are so very liable.

Japanned leather, varieties of which are known as *patent* and *enamel* leather, which is largely used for fancy work and for shoes, is said to

the skins are blackened again with a fluid black mixed with turpentine and hung up to dry again. After the skins have been allowed to settle, being laid in a pile for about a month's time, or longer if possible, the leather is tacked on to a frame and given a brush coat of varnish. A baking follows in an oven of moderate heat. The temperature is gradually raised and the baking continued three days. Exposure to the sun for 10 hours completes the process. American manufac-

LEATHER INDUSTRY

YEAR	Number of establishments	Wage earners (average number)	Wages	Cost of materials	Value of products	Value added by manufacture
1909	919	62,202	\$32,102,845	\$248,278,933	\$327,874,187	\$79,595,254
1904	1,049	57,239	27,049,152	191,179,073	232,020,946	61,441,913
1899	1,306	52,109	22,591,091	155,000,004	204,038,127	49,038,123
1889	1,787	42,392	21,249,989	122,946,721	172,136,092	49,189,371
1879	5,628	40,282	16,503,828	150,384,117	200,264,944	43,880,827
1869	7,569	35,243	14,505,775	118,569,634	157,237,597	38,667,963
1859	5,188	26,246	8,175,508	49,812,659	75,698,747	25,886,088
1849	6,686	25,595	6,541,678	26,429,881	43,457,898	17,028,017

have been made in America as early as 1818, by Seth Boyden, of Newark; but it is only within recent years that the American product has approached in excellence that made in Germany and France. The European method of manufacture was described substantially as follows in the *Twelfth United States Census, Bulletin on*

turers make patent leather from chrome-tanned skins. The product is quite different, as is also the process employed. The main point of difference is that in this enameled leather the application of the several varnish coats is made upon the grain side of the leather instead of upon the flesh side, as in the older patent leather.

LEATHER INDUSTRY, INCLUDING FINISHED PRODUCTS, STATISTICS OF PRODUCTION, ETC., 1909

THIRTEENTH UNITED STATES CENSUS

INDUSTRY	Number of establishments	Wage earners (average number)	Wages	Value of products	Value added by manufacture
Total ..	5,728	309,766	\$155,110,878	\$992,713,322	\$322,838,804
Leather ..	919	62,202	32,102,845	327,874,187	79,595,254
Leather, tanned, curried, and finished	4,809	247,564	123,008,033	664,839,135	243,243,550
Finished products	139	3,006	1,860,880	23,691,887	8,069,284
Belting and hose, leather	1,918	198,297	98,462,695	512,797,642	180,059,429
Boots and shoes, including cut stock and findings	377	11,354	4,763,830	23,630,598	10,422,597
Gloves and mittens, leather	1,347	14,632	8,071,484	54,224,602	21,046,965
Leather goods, and harness	524	11,122	5,537,329	28,027,964	13,398,899
Trunks, etc.	425	7,681	3,623,200	18,838,281	8,847,842
Leather goods, not specified	79	1,472	688,615	3,628,161	1,698,834
Pocketbooks					

the Leather Industry, No. 195, Manufactures, vol. ix, part iii: In the preparation of enameled leather a foundation coat of lampblack mixed with linseed oil has been laid on the flesh side, since the infancy of the industry in Europe.

The first coats are dried and rubbed down so as to work the liquid well into the leather, while the last coat is applied with a brush and then baked at a temperature of from 120° F. to 140° F. for 36 hours and dried in sunlight for from

KIND OF ANIMAL	NUMBER OF HIDES AND SKINS TAKEN OFF IN UNITED STATES, 1909			Number of hides and skins treated, 1909	Ratio of number taken off in United States to number treated (per cent)
	Total	By slaughter-houses, rendering establishments, etc.	On farms and ranges		
All kinds ..	33,665,169	30,476,414	3,188,755	125,812,254	* 15.8
Cattle ..	13,764,686	12,356,046	1,408,640		
Calves ..	5,196,043	4,064,443	1,131,600		
Sheep and lambs ..	14,274,413	13,744,887	529,526		
Goats and kids ..	287,497	168,508	118,989		
Horses and colts ..	114,834	114,834		
All other animals ..	27,696	27,696		

* The total number taken off, from which this ratio is computed, was 19,908,402.

Successive coats of this mixture are applied, the skin being allowed to dry and the surface ground down with pumice stone after each coat. Then

6 to 10 hours. In the modern process the leather is softer, more flexible, and takes a less brilliant polish than that made from bark-tanned leather,

but it is much less likely to crack and is more suitable for shoes than the brittle and inflexible leather made in the older way.

Cordovan is made from horsehide and is so called, because it was first successfully tanned in Cordova, Spain. Most of the hides of commerce are taken from the wild horses of South America. A portion of the skins, oval in shape, taken over the rump, about 3 feet long and half as wide, is all that is used for leather. Its distinctive quality is that it is nearly waterproof.

Statistics. According to the census of manufactures for 1909 there were in the United States 5728 establishments devoted to various branches of leather manufacture. The annual value of the product of all branches of the industry, including finished product, was given as \$992,713,322. Dealing specifically with the leather industry proper, which includes the manufacture of leather from hides and skins of all kinds, domestic and imported, by various methods of tanning, such as the oak, hemlock, and chrome or other mechanical processes, and the currying and finishing of leather to be used for various manufacturing purposes, the census reports that in 1909 there were in the United States 919 establishments giving employment on an average to 62,202 wage earners and paying annually in wages \$32,102,845, with an annual value of products amounting to \$327,874,187 and a capital amounting to \$332,726,952. The growth of this industry is shown by the first table on page 683, while the other tables show in detail the product of the leather industry and also the materials used and the sources of the various hides and skins, as well as the statistics for the entire industry, including not only the manufacture of leather for use in the various industries but the finished products.

MATERIALS USED IN THE AMERICAN LEATHER INDUSTRY (THIRTEENTH U. S. CENSUS)

MATERIAL	1909	1904	1899
Total cost . . .	\$248,278,933	\$191,179,073	\$155,000,004
Cattle hides			
Number	18,360,415	17,581,613	15,838,862
Cost	\$119,410,767	\$89,126,593	\$77,784,760
Skins:			
Number	97,680,571	90,625,064	83,870,481
Cost	\$75,647,790	\$56,341,332	\$45,761,209
Calf and kip:			
Number	10,732,638	12,481,221	8,944,454
Cost	\$31,790,572	\$15,728,616	\$10,792,485
Goat:			
Doseas.	4,006,472	3,972,134	4,003,908
Cost	\$27,833,214	\$26,756,012	\$24,950,223
Sheep:			
Doseas.	2,173,505	2,291,030	2,042,304
Cost	\$12,231,618	\$10,547,983	\$8,457,995
All other:			
Number	3,788,209	2,985,881	2,371,488
Cost	\$3,792,386	\$3,311,821	\$1,560,506
Rough leather purchased:			
Whole sides:			
Number	1,468,213	2,414,102	1,086,592
Cost	\$4,967,781	\$3,136,661	\$3,534,097
Grains:			
Sides	525,786	842,332	165,938
Cost	\$1,201,842	\$980,260	\$467,125
Splits	\$1,442,505	\$1,108,243	\$1,330,589
All other	\$1,944,129	\$627,491	\$1,341,584
Tanning materials	\$30,928,758	\$25,029,994	\$17,017,447
All other materials	\$12,735,361	\$9,828,499	\$7,773,193

ports of hides and skins were valued at \$78,487,324, on which \$54,691,722 were admitted free of

PRODUCTS OF THE AMERICAN LEATHER INDUSTRY (THIRTEENTH U. S. CENSUS)

PRODUCT	1909	1904	1899
Total value . . .	\$327,874,187	\$252,620,986	\$204,088,127
Leather	\$306,476,720	\$236,765,803	\$194,202,063
Sole:			
Sides	17,805,252	17,937,938	15,472,072
Value	\$88,331,713	\$69,205,600	\$55,481,825
Hemlock:			
Sides	7,963,728	9,929,964	9,810,996
Value	\$32,237,151	\$32,678,015	\$29,305,561
Oak			
Sides	3,805,861	3,607,963	2,562,814
Value	\$26,083,793	\$19,157,805	\$12,359,836
Union:			
Sides	5,756,227	4,400,011	3,096,162
Value	\$28,375,815	\$17,371,780	\$12,807,262
Chrome:			
Sides	279,436	*	2,100
Value	\$1,634,954	*	\$8,966
Upper, other than calf or kip skins	\$39,951,460	\$24,815,835	\$25,311,838
Grain, satin, pebble, etc (side leather)			
Sides	7,946,769	6,556,166	8,141,093
Value	\$24,198,993	\$17,478,802	\$17,478,802
Finished splits:			
Number	8,134,229	6,205,050	8,790,382
Value	\$7,410,740	\$5,993,231	\$6,740,502
Patent and enameled shoe:			
Sides	2,705,291	1,356,777	236,943
Value	\$8,341,727	\$3,335,352	\$1,092,534
Horsehides and coltskins:			
Number	1,342,938	1,529,395	223,378
Value	\$4,953,145	\$4,596,065	\$843,118
Calf and kip skins, tanned and finished:			
Number	19,012,064	12,014,223	8,264,272
Value	\$42,412,256	\$22,508,335	\$14,619,150
Grain finished:			
Number	17,516,910	10,211,885	7,112,859
Value	\$39,982,447	\$18,996,551	\$12,127,439
Flesh finished:			
Number	1,495,154	1,802,338	1,151,413
Value	\$2,429,809	\$3,511,784	\$2,491,711
Goatskins, tanned and finished:			
Number	47,907,211	45,691,492	47,043,932
Value	\$40,882,640	\$37,887,349	\$35,672,981
Black:			
Number	40,351,192	40,019,614	38,178,816
Value	\$33,949,575	\$32,822,282	\$29,050,886
Colored:			
Number	7,556,019	5,671,878	8,867,116
Value	\$6,933,065	\$5,065,067	\$6,622,095
Sheepskins, tanned and finished:			
Number	20,597,598	20,290,985	20,290,985
Value	\$11,168,829	\$8,363,755	\$8,363,755
Belting:			
Sides	1,042,070	859,564	1,472,016
Value	\$6,995,133	\$4,754,456	\$7,092,778
Harness:			
Sides	3,946,235	4,369,561	3,444,616
Value	\$24,802,734	\$20,274,188	\$16,712,056
Carriage, automobile, and furniture:			
Hides	1,398,842	827,104	619,741
Value	\$14,266,742	\$7,780,804	\$5,748,387
Trunk, bag, and			
Hides	\$6,198,544	\$4,920,750	\$2,611,326
Value	\$11,746,569	\$2,283,761	\$1,688,413
Glove:			
Hides	\$4,913,543	\$3,344,614	\$3,084,837
Value	\$6,335,599	\$10,180,949	\$6,864,345
Sold in rough	\$11,746,569	\$13,044,268	\$10,117,464
All other products	\$8,632,689	\$7,665,228	\$5,514,395
Work on materials for others:	\$12,764,778	\$8,189,960	\$4,321,669

* Not reported separately.

† Includes wool to the value of \$2,476,193, reported as a subsidiary product of the industry. In addition, wool valued at \$11,597 was reported by establishments tanning leather for their own use in the manufacture of leather gloves and mittens and other leather goods.

In 1909 the imports of leather and tanned skins into the United States amounted in value to \$5,313,137, an amount that increased by 1914 to \$13,810,347. In the fiscal year 1909 the im-

duty, while duty was paid on imports valued at \$23,795,602. In 1914, when hides were being admitted free of duty, the imports were valued at \$120,280,781. The exports of leather and skins from the United States in 1909 were valued at \$30,413,099, an amount that increased to \$42,384,190 by 1913 but fell to \$36,668,869 in 1914. The exports of manufactures of leather in 1909 were valued at \$12,561,696 and increased in 1914 to \$20,897,392, making a total value of leather and leather manufactures exported equal to \$42,974,795 in 1909 and \$57,566,261 in 1914. The accompanying table shows, for the fiscal years 1909, 1904, and 1899 respectively, the value of the exports and imports of the different classes of leather as distinguished by the United States Bureau of Foreign and Domestic Commerce. It will be noted that the total value of exports showed a very considerable increase during the period covered, which, however, was partly attributable to increase in prices.

CLASS	Year ending June 30		
	1910	1905	1900
EXPORTS			
Total value	\$21,797,157	\$21,797,157	\$21,797,157
Sole leather	6,433,303	6,433,303	6,433,303
Kid (glazed)	10,926,255	1,576,204	1,909,914
Patent or enameled leather	367,601	166,320	101,708
Splits, buff, grain, and all other upper leather	15,620,336	15,057,791	11,913,256
All other leather	2,192,103	1,513,154	1,438,976
IMPORTS			
Total value	7,607,923	5,612,642	6,519,172
Skins for morocco	1,993,834	2,446,481	3,134,657
Calfskins, tanned, or tanned and dressed	269,582	605,960	132,674
Patent, japanned, varnished, or enameled leather	236,764		
Upper leather, dressed and finished	972,617	2,560,201	3,251,841
Chamois and other leather, bookbinders' calfskins, kangaroo, sheep, and goat skins including lamb and kid skins, dressed or finished	1,356,133		
All other leather	2,787,943		

Argentina is the leading foreign source of American raw hides, imports from this country in 1914 being valued at \$16,165,676. Canada supplied \$7,132,744, Mexico \$5,478,901, France \$3,319,136, in a total amounting to \$52,181,942.

Bibliography. C. T. Davis, *The Manufacture of Leather* (Philadelphia, 1897); H. R. Procter, *The Principles of Leather Manufacture* (London, 1903); G. de Récy, *The Decoration of Leather* (ib., 1905); Society of Arts and Worshipful Company of Leather Sellers, *Report of Committee on Leather for Book-Binding* (ib., 1906); A. Watt, *Art of Leather Manufacture* (5th ed., ib., 1906); Richard Brunner, *Manufacture of Lubricants, Shoe Polishes, and Leather Dressings* (New York, 1906); S. R. Trotman, *Leather Trades Chemistry* (Philadelphia, 1908); C. G. Leland, *Leather Work* (3d ed., New York, 1908); Sadtler, *Industrial Organic Chemistry* (4th ed., Philadelphia, 1912); Wood, *The Puering, Bating, and Drenching of Skins* (London, 1912); D. W. Redmond, *Leather Glove Industry in the United States* (New York, 1913); H. R. Procter, *Making of Leather* (ib., 1914).

LEATHERBACK, LEATHERY TURTLE, or LUTH. A large oceanic turtle (*Sphargis*, or *Dermochelys coriacea*) distinguished prominently by having the body incased by a leathery integument instead of a horny shell. This remarkable turtle has been observed in all the tropical seas, but is everywhere rare and is probably approaching extinction. It is more often seen in the Atlantic than elsewhere and has been known to stray northward to Long Island and the coast of France. It exceeds all other turtles in size. The British Museum contains a specimen 6½ feet long, the shell being 4 feet long. Such a specimen, it is believed, would weigh from 700 to 1000 pounds, and Agassiz relates that he saw some weighing more than a ton. The color is brown, more or less marked with yellow in youth. The head is very turtle-like, the tail has been almost lost. The fore flippers are broad and nearly as long as the body, while the hinder ones are broad, stout paddles, giving great swimming power, so that a dozen men have found it difficult to drag a hooked specimen up on a beach. This power is an adaptation to the almost continuous pelagic life led by the animal, which feeds principally on fish, crustaceans, mollusks, jellyfishes, and similar marine prey caught in the open sea or about submerged reefs. Its flesh is not of good taste, is rarely eaten, and is regarded by most persons as unwholesome. Its breeding habits are similar to those of other chelonians. Rather later in the season than the true turtles, it seeks a sandy shore or islet and buries in the sand a great number of eggs. The young turtles seek the water as soon as hatched, but few survive to reach an age and size that make them safe against most enemies.

Structure and Affinities. These turtles differ widely from ordinary chelonians, and competent herpetologists differ as to their history and probable line of development. The factors in the discussion and the varying views are briefly presented by Hans Gadow in vol. viii of *The Cambridge Natural History* (London, 1901). Gadow himself, supported by Boulenger, Cope, and others, believes *Sphargis* to be the sole remnant of a primitive group quite independent of the other chelonians and constituting with its scantily known fossil ancestors an order, *Athecae*, opposed to all remaining turtles (order *Thecophora*). (See **TURTLE**.) The opposite view is that the genus is a specialized offshoot from the typical *Chelonia* and separable only as a family. The structure of this turtle is very peculiar, especially as to its shell. This is not formed as in other turtles by an outgrowth of the spine or backbone, for it is nowhere in contact with the internal skeleton, except by a nuchal bone; but is a real integument, continuous all around the body and forming a jacket. This jacket consists of a dense leathery skin, in which are deeply embedded a mosaic of many hundreds of little polygonal bony plates fitted closely together and at intervals rising into 12 longitudinal ridges—seven dorsal and five lateral and ventral. In young specimens the entire shell is soft, but ossification proceeds with growth, and when mature the integument is almost rigid, though thin. Such an integument more closely resembles that of a crocodile than that of a true turtle, but *Sphargis* has a plastron and neural plate.

Bibliography. Hans Gadow (above cited); G. A. Boulenger, *Catalogue of Chelonians in the*

British Museum (London, 1889); E. C. Case, in *Journal of Morphology*, vol. xv (ib., 1897); O. P. Hay, in *American Naturalist*, vol. xxxii (Philadelphia, 1898); R. L. Ditmars, *The Reptile Book* (New York, 1907); S. W. Williston, *Water Reptiles of the Past and Present* (Chicago, 1914).

LEATHER BEETLE. A dermestid beetle (*Dermestes vulpinus*), allied to the bacon beetle (q.v.), whose grubs damage leather, even when made up into shoes, harness, etc.; they also damage silkworm cocoons, dried fish, and other dead animal matter. Its larvæ feed voraciously, molt six times, and reach a full growth, under favorable circumstances, in from two to three weeks. They are likely to crawl away from their food when ready to pupate, and make cells in wood or any near-by substance. The pupa stage lasts about two weeks. The best remedy is fumigation with bisulphide of carbon or hydrocyanic-acid gas.

LEATHER CLOTH. A coated or enameled textile fabric, intended to possess some of the good qualities of leather without being so costly. There are forms of leather cloth, however, which are in fact leather and not cloth and consist of leather parings and shavings reduced to a pulpy mass and molded to any desired form. See ENAMELED CLOTH

LEATH'ERFISH'. A filefish (q.v.).

LEATHER FLOWER. A North American plant. See CLEMATIS.

LEATH'ERJACK'ET. A bluish and silvery carangoid fish (*Oligophites saurus*), numerous in the tropical seas on both sides of America, but not valued as food. A kindred species, *Oligophites saliens*, is called sauteur, and both have many local names indicating swiftness and activity. See Plate of HORSE MACKEREL.

LEATH'ERSTOCK'ING. The most familiar of the names given to Natty Bumppo, the hero of Cooper's pioneer romances, hence called the *Leatherstocking Tales*.

LEATHER TURTLE (so called from its coriaceous shell). 1. The leatherback (q.v.). 2. A soft-shelled turtle, especially those of the American genera *Trionyx* and *Amyda*. See SOFT-SHELLED TURTLE.

LEATH'ERWOOD' (so called from the toughness of the bark), MOOSEWOOD, or WICOPY (*Dirca palustris*). A deciduous treelike shrub from 3 to 6 feet high, native of North America, which belongs to the family Thymeleaceæ. The wood is white, soft, and very brittle. The bark is exceedingly tough and has been used for ropes, baskets, etc. The leaves are obovate oblong; the flowers, which appear before the leaves, yellow. The shrub, which abounds in rich moist woods from New Brunswick to Minnesota and south to the Gulf of Mexico, is used to some extent in ornamental gardening.

LEATHES, lēthz, STANLEY (1830-1900). An English theologian and Hebraist. He was born at Ellesborough, Buckingham, studied at Jesus College, Cambridge, and in 1863 was appointed to the chair of Hebrew in King's College, London. From 1870 to 1885 he was a member of the Old Testament Revision Committee. His skill as a Hebraist is to be seen in *A Short Practical Hebrew Grammar* (1869). Leathes was delegate to the Evangelical Alliance in New York in 1873. The last dozen years of his life were spent at Much Hadham, Hertford. He is best known for his lectures: *The Witness of the Old Testament to Christ* (1868), *The Witness*

of Saint Paul to Christ (1869), *The Witness of Saint John to Christ* (1870), being Boyle lectures; the Hulsean lectures, *The Gospel its own Witness* (1874); and in the same year the Bampton lectures, *The Religion of the Christ*. He also wrote *The Law in the Prophets* (1891) and *Testimony of the Earlier Prophetic Writers to the Primal Religion of Israel* (1898).

LEAVE AND LICENSE. A phrase in English law to denote that leave or permission was given to do some act complained of. It is a good plea to an action of tort, provided the act committed is not itself a crime, upon the principle that a person consenting to a harmful act, as a trespass or an assault, cannot afterward be heard to say that his legal right to immunity from such treatment has been violated. This principle has been embodied in a familiar legal maxim, *volenti non fit injuria*. See LICENSE.

LEAVEN, lēv'en (OF., Fr. *levain*, from Lat. *levamen*, raiser, from *levare*, from *levis*, light; connected with Lith. *lengvus*, Gk. *ελαφύς*, *elachys*, Skt. *laghu*, *raghu*, light). Sour dough, or dough saved from a previous baking in which fermentation is going on, and which, owing to the presence and rapid growth of the yeast plant, either wild or cultivated, with perhaps always other microorganisms also, quickly communicates its character to fresh dough with which it is mixed, causing the process of fermentation to take place in it so that it will "rise" and yield a porous bread. The use of leaven in baking dates from a very remote antiquity; the employment of yeast is more recent. See YEAST; BREAD.

LEAVENWORTH, lēv'en-würth. A city and the county seat of Leavenworth Co., Kans., 26 miles by rail northwest of Kansas City, on the Missouri River and on the Atchison, Topeka, and Santa Fe, the Missouri Pacific, the Union Pacific, the Chicago, Rock Island, and Pacific, the Chicago, Burlington, and Quincy, the Chicago Great Western, and other railroads (Map: Kansas, G 4). With its excellent transportation facilities it is an important commercial centre, its wholesale trade being very large. There are also coal-mining interests, large machine shops, a packing house, and extensive manufactures, including vitrified and building bricks, stoves, furniture, milling machinery, flour, soap, brooms, washing machines, wagons, etc. The city has a public library and, among noteworthy structures, the cathedral of the Immaculate Conception, county courthouse, and Federal building. In the suburbs are the United States and State penitentiaries; the National Military Home for disabled volunteers, with quarters for 3000 men, and occupying 720 acres of beautifully laid-out grounds; and Fort Leavenworth (q.v.). The last, one of the most important military posts of the West, has a noted infantry and cavalry school, a national military prison, and a national cemetery in which are 3221 graves, 1445 of unknown dead. There are also in the city several hospitals and asylums, Association Park, and two fine railroad and wagon bridges cross the river at this point. An object of particular interest is the immense bronze statue of Gen. U. S. Grant. Leavenworth adopted the commission form of government in 1909. Leavenworth was founded in 1854 by a party of so-called Sons of the South, and throughout the struggle between the antislavery and proslavery parties for the control of Kansas it was a centre of proslavery influence. In 1855 it was chartered as a city of the first class.

Pop., 1890, 19,768; 1900, 20,735; 1910, 19,363. Consult Burke and Rock, *History of Leavenworth* (Leavenworth, 1880).

LEAVENWORTH, ELIAS WARNER (1803-87). An American lawyer. He was born in Canaan, N. Y., and graduated at Yale in 1824. He then studied law in the office of William Cullen Bryant at Great Barrington, Mass., and in the law school at Litchfield, Conn.; was admitted to the bar in 1827; removed to Syracuse, N. Y., in the same year and there practiced his profession. He was twice mayor of Syracuse (1849, 1859); was Secretary of State of New York in 1854-55; was president of the Board of Quarantine Commissioners in 1860 and of the commission appointed to choose a location for the State asylum for the blind in 1865; and was a member of the State Constitutional Convention of 1872. In 1861 he was appointed by President Lincoln commissioner under the convention with New Granada, and from 1875 to 1877 he was a member of Congress. He published a *Genealogy of the Leavenworth Family in the United States* (1873).

LEAVENWORTH, FORT. See FORT LEAVENWORTH.

LEAVES. See LEAF.

LEAVES OF GRASS. A collection of poems by Walt Whitman (1855).

LEAVITT, lēv'it, ERASMUS DARWIN (1836-1916). An American mechanical engineer, born at Lowell, Mass. After receiving a common-school education he was an apprentice for three years in the shops of the Lowell Manufacturing Company and for one year with Corliss and Nightingale, of Providence, R. I. He was an assistant foreman at the City Point Works, South Boston (1858-59), chief draftsman of Thurston, Gardner, and Company, Providence (1860-61), and assistant engineer in the United States Navy (1861-67). He was afterward consulting engineer for the cities of Boston and Louisville, for Henry R. Worthington in New York, and for the Calumet and Hecla Mining Company from 1874 to 1904, when he retired. In 1883 he was president of the American Society of Mechanical Engineers.

LEAVITT, JOSHUA (1794-1873). An American religious journalist. He was born in Heath, Mass., Sept. 8, 1794, graduated at Yale College in 1814, was admitted to the bar in Northampton, Mass., 1819, and practiced for a time in Heath, Mass., and Putney, Vt. He graduated at the Yale Divinity School in 1825. About 1830, for the promotion of revivals of religion, many pastors adopted what were then called "new measures," such as the employment of evangelists, the holding of protracted meetings, inquiry meetings, etc. The New York *Evangelist* was established to promote revivals and defend the "new measures," and from 1831 to 1837 Dr. Leavitt was its editor. During this period the antislavery agitation had its beginnings, and from the first it enlisted the warm support of Dr. Leavitt, who made the *Evangelist* a powerful agent for its promotion. When the American Antislavery Society was organized in 1833, he became one of its most active and influential members. From 1837 to 1840 he was the editor of the society's weekly organ, the *Emancipator*, and a member of the executive committee. When the Abolitionists divided in 1840, he went with the new organization, and thenceforth his antislavery efforts were mainly confined to the political arena. He was an active promoter of the

Liberty and the Free-Soil parties. In 1848 he became office editor of the *Independent*, retaining a connection therewith to the day of his death. He was active in many political and social reforms. About 1834 he compiled and published *The Christian Lyre*, a work containing the great body of the hymns and tunes used in the revivals of that day. He died in Brooklyn, Jan. 16, 1873.

LEAVITT, MARY GREENLEAF (CLEMENT) (1830-1912). An American temperance worker and lecturer, born at Hopkinton, N. H. After graduating from the State Normal School at West Newton, Mass., in 1851, she taught until 1857, when she married Thomas H. Leavitt. In 1867 she established a private school. She helped to organize the Boston Woman's Christian Temperance Union, became a member of the executive board of the State organization, and later was lecturer for the national organization. From 1883 to 1891 she served as secretary of the World's Woman's Christian Temperance Union, organizing branches of the union in Europe, Asia, Australia, Africa, and in many islands. After 1891 she was honorary life president of the World's Union. She wrote many tracts on temperance.

LEBADEIA, lēb'a-dē'yā. See LIVADIA.

LEB'ANON. A city in St. Clair Co., Ill., 24 miles east of St. Louis, Mo., on the Baltimore and Ohio Southwestern Railroad (Map: Illinois, E 8). It has a large flourishing mill with elevators, a coal mine, soda-water factory, brewery, and cigar factories. McKendree College (Methodist Episcopal) was founded here in 1828. With its elevated situation, healthful climate, natural beauty, and the possession of fine mineral springs, the city is one of the popular residential suburbs and summer resorts near St. Louis. Lebanon was laid out in 1825, incorporated as a village in 1857, and chartered as a city in 1874. There is a municipal plant. Pop., 1900, 1812; 1910, 1,107.

LEBANON. A city and the county seat of Boone Co., Ind., 28 miles northwest of Indianapolis, on the Cleveland, Cincinnati, Chicago, and St. Louis and the Central Indiana railroads (Map: Indiana, E 4). It has saw mills, chair and kitchen-cabinet factories, a condensed-milk plant, cream-separator factory, grain elevators, etc. The city contains a Carnegie library. Lebanon, settled in 1824, is governed under a charter of 1875 which provides for a mayor, elected every four years, and a unicameral council. The city owns and operates its water works. Pop., 1900, 4465; 1910, 5474.

LEBANON. A city and the county seat of Marion Co., Ky., 67 miles southeast of Louisville, on the Louisville and Nashville Railroad (Map: Kentucky, E 4). It has a splendid high school and St. Augustine's Academy. In the vicinity are a national cemetery and Loretto Academy. The principal industries are farming, stock raising, and manufactures of whisky, flour, meal, wheels, hardwood flooring, carriages and wagons, furniture, etc. There are also large tobacco warehouses. The water works are owned by the municipality. Pop., 1900, 3043; 1910, 3077.

LEBANON. A city and the county seat of Laclede Co., Mo., 57 miles northeast of Springfield, on the St. Louis and San Francisco Railroad (Map: Missouri, D 4). It is a health resort and has a fine courthouse and high-school building. The centre of an agricultural, fruit-growing, stock-raising, and dairying district,

Lebanon carries on a considerable trade and manufactures ice, flour, lumber, bricks, machine-shop products, barrels, etc. It has also a large tomato-canning establishment. The water works and electric-light plant are owned by the city. Pop., 1900, 2125; 1910, 2430.

LEBANON. A town and one of the county seats of Grafton Co., N. H., 65 miles by rail northwest of Concord, on the Mascoma and Connecticut rivers and on the Boston and Maine Railroad (Map: New Hampshire, E 6). Good water power, supplied by the Mascoma River, has aided the development of the town as a manufacturing centre. It is the seat of an extensive woolen industry and has manufactures of wood and iron working machinery, overalls and mackinaws, watchmakers' tools, rakes, snow shovels, scythes, doors, sash and blinds, knitted underwear, electric motors, excelsior, boxes, etc. There are also saw and grist mills, a large brickyard, and granite works. There is a public library here. The government is administered by town meetings. Lebanon, named after Lebanon, Conn., was chartered July 4, 1761, and was settled in 1762. Pop., 1900, 4965; 1910, 5718. Consult Patterson, *Oration in Commemoration of the One Hundredth Anniversary of Lebanon* (Boston, 1862), and C. A. Downs, *History of Lebanon, New Hampshire* (Concord, 1908).

LEBANON. A village and the county seat of Warren Co., Ohio, 30 miles northeast of Cincinnati, on the Cincinnati, Lebanon, and Northern and the Dayton, Lebanon, and Cincinnati railroads (Map: Ohio, B 7). It is situated in a rich agricultural region, has three corn-canning establishments, bridge-building works, and a shoe factory, contains a Carnegie library, a fine courthouse building, and an orphans' home, and is the seat of Lebanon University (1855). There are municipal water works, electric-light and gas plants. Lebanon was laid out in 1802. Pop., 1900, 2867; 1910, 2698.

LEBANON. A city and the county seat of Lebanon Co., Pa., 26 miles east of Harrisburg, on the Philadelphia and Reading, the Cornwall, and the Cornwall and Lebanon railroads (Map: Pennsylvania, J 6). It is in the Lebanon valley between the Blue and South mountains, a vicinity in which there is an abundance of brownstone, limestone, and brick clay; and it is within 5 miles of the Cornwall iron mines, a deposit of magnetite, covering an area of about 104 acres and having produced since its discovery 16,000,000 tons of ore, yielding 48 per cent of iron. The principal industries are iron mining, quarrying, brickmaking, and the manufacture of silk, machinery, bolts and nuts, boilers, chains, stoves, cigars, and organs. The ironworks, rolling mills, and furnaces are extensive; the nut and bolt plant ranks among the largest in the world; and the chainworks produce some of the most massive chains in use. There are four libraries and a fine courthouse in the city. Lebanon was laid out in 1753, having been settled some 10 years earlier; was incorporated in 1820; received a city charter in 1885; has adopted the commission form of government, consisting of four councilmen and a mayor; and owns and operates its water works. Pop., 1900, 17,628; 1910, 19,240; 1914 (U. S. est.), 19,926.

LEBANON. A city and the county seat of Wilson Co., Tenn., 31 miles east of Nashville, on the Nashville, Chattanooga, and St. Louis and the Tennessee Central railroads (Map: Ten-

nessee, D 2). It is the seat of Cumberland University (Cumberland Presbyterian), opened in 1842, of Castle Heights Training School, and of Lebanon College, for young ladies. The city controls a considerable trade in the products of the surrounding farming country and has some manufactures, particularly of cedar pencils. The water works and electric-light plant are owned by the city. Lebanon has adopted the commission form of government. Pop., 1900, 1956; 1910, 3659.

LEBANON, CEDARS OF. See CEDAR

LEBANON, MOUNT (Lat. *Libanus*, Ar. *Jebel Libnān*, White Mountains). The western and higher of the two mountain chains of Syria. The eastern is known as Anti-Libanus (q.v.) or Anti-Lebanon, Ar. *Jebel el-Sharki* (Eastern Mountains). Between the two is the table-land of el-Bika'a, called by the Greeks Cœle-Syria (hollow Syria). The Lebanon chain begins at the stream called Nahr el-Kebir north of Tripoli and extends southward parallel to the coast, a distance of not quite 100 miles to the point where the Litany breaks through on its way to the sea, not far from Tyre. Thence the chain is continued by the hills of Palestine—the mountains of Naphtali, Ephraim, and Judæa of the Bible. The average height is about 7000 feet, the highest peaks are Dahr el-Kodib (10,050 feet), el-Miskiyeh (10,037 feet), and Jebel Makmal (10,013 feet). The eastern slope is abrupt and barren; the western more gradual. Several spurs strike off across the strip of coast and end at the sea in bold promontories. The formation is limestone, sandstone, and basalt. Deep ravines and abrupt precipices are a feature of the landscape, and the general appearance is barren and desolate. The mountains, once well wooded, are now quite bare. Of the famous cedars (see CEDAR for illustration) but a few groves remain. Iron and coal are found, also red amber and asphalt. In winter the snowfall is great, and the snow lasts on the summits for six months; in the ravines it is found the year round and is carried to Beirut and other cities in the heat of summer. Two important rivers rise in the mountains and flow through the Bika'a before turning westward to the sea, the Litany (Leontes) flowing southward and el-Asi (Orontes) flowing to the north. Numerous streams water the western slopes, and here and in the valleys the soil is fruitful; orchards, vineyards, olive and mulberry plantations, and fields of wheat and barley abound. The population of the Sanjak of Lebanon, according to the census of 1896, was then 399,530, of whom 30,422 were Moslems, 229,680 Maronites, 34,472 United Greeks, 54,208 Orthodox Greeks, 49,812 Druses, and a few hundred Protestants. Since then, however, the population has increased somewhat, in spite of emigration. The chief occupation is the rearing of silkworms, and great quantities of raw silk are exported to Italy and France; some silk manufacture is also carried on in the villages, and there are several factories established by foreign firms. The carriage road over the Lebanon from Beirut to Damascus is now supplanted by a narrow-gauge railway, opened in 1895. About 20 miles of it are cogged. The mountains do not contain many ancient remains. There are some early anchorites' caves and rock tombs. Since the massacres of the Christians in 1860 and the consequent French intervention (see DRUSES) the Sanjak of Lebanon has had a Christian governor under the protection of the Powers. The people are

markedly superior to other inhabitants of Syria. Consult, besides the standard works on Palestine and Syria, such as Robinson, Buhl, and George Adam Smith: Oscar Fraas, *Drei Monate im Libanon* (Stuttgart, 1876); Baedeker, *Palestine and Syria* (5th ed., Leipzig, 1912); F. J. Bliss, *The Religions of Modern Syria and Palestine* (New York, 1912).

LEBANON SPRINGS. A village of New York. See NEW LEBANON.

LEBANON VALLEY COLLEGE. A coeducational college at Annville, Pa., 20 miles from Harrisburg, founded in 1866, and under the control of the United Brethren. The college plant consists of seven buildings, a large campus, and an athletic field. The institution comprises five departments: a college, offering five groups of studies leading to the degree of B.A., and preparatory, music, oratory, and art departments. In 1914-15 the total attendance was 360, including 220 collegiate students, with 25 instructors. The library contained 10,000 volumes. The value of the buildings of the college and grounds was \$293,000, the endowment \$75,000, the gross income \$52,000, and the total value of college property \$402,263. The president in 1914 was Rev. George D. Gossard.

LE BARGY, le bār'zhé', CHARLES GUSTAVE AUGUSTE (1858-). A French actor. He was born at La Chapelle, studied for the stage at the Conservatoire, and in 1880 made his first appearance at the Comédie Française, where he was a member of the company from 1887 to 1910. He played also at the Royalty Theatre, London, in 1907. He became Chevalier of the Legion of Honor, and a professor at the Conservatoire in 1896. The plays in which he gained his reputation include: *L'Etrangère*, *Hernani*, *Les ténailles*, *Patrie*, *Raymonde*, *L'Enigme*, *Margot*, *Le dédale*, *Le duel*, *Le demi-monde*, *Connaissez-moi*, *Après moi*, *Le respect de l'amour*.

LE BAS, le bâ, PHILIPPE (1794-1860). A French classical archaeologist and historian, born in Paris. In 1822-27 he had charge of the education of Louis Napoleon, afterward Napoleon III. Subsequently he was professor of Greek at the Lyceum and lecturer at the Normal School. In 1842 he was sent by the government on an archaeological expedition to Greece and Asia Minor; he collected more than 450 drawings of ancient monuments and more than 5000 inscriptions. He was elected to the Institute in 1838. His works include *Voyage archéologique en Grèce et en Asie Mineure* (1847-68), completed by Waddington (q.v.), and *Explication des inscriptions grecques et latines recueillies en Grèce* (1835). Consult J. E. Sandys, *A History of Classical Scholarship*, vol. iii (Cambridge, 1908).

LEBBÆUS. See THADDEUS.

LEBEAU, le-bô', JEAN LOUIS JOSEPH (1794-1865). A Belgian statesman. He was born at Huy; studied and practiced law at Liège; and through the Liberal organ, *Mathieu Laensbergh* (later *La Politique*), which he founded in 1824, brought about a union of the Liberals and Clericals. This union, by its opposition to the ministry, started the revolution which resulted in the separation from Holland. Under Leopold he was Minister of Justice (1832-34), Governor of Namur, Ambassador to the German Confederation in 1839, and Minister of Foreign Affairs (1840-41). For more than 30 years he was a member of the House of Deputies, where he became a leader of the Liberals and a strong op-

ponent of the Clerical party. He resigned in 1864. His *Souvenirs personnels* were edited by Freson (Brussels, 1883).

LEBEL, le-bél', NICOLAS (1835-91). A French officer and inventor. He was born near Angers, entered the military school of Saint-Cyr in 1855, and took part as captain in the campaign of 1870 with the Army of the North. Later he was appointed director of the artillery school at Tours and in 1883 of that of Châlons, where he began to experiment on firearms. As a result he was commissioned to secure a new gun for the infantry. He invented a weapon of small calibre which, after being perfected by others, was adopted by the French army in 1886. In 1887 he was colonel of a regiment in Sedan, but illness forced him to retire.

LEBENSOHN, lä'bén-sôn, ABRAHAM BÄR (1789-1878). A Hebrew poet and grammarian, born at Vilna. He was sent to a Hebrew school at three, studied the Talmud at seven, and took up the Kabbalah soon after. According to the custom of the time, he was married very early—at 13. Too liberal to become a rabbi, he for many years taught children Hebrew. He then went into the brokerage business. From 1848 to 1864 he was connected with the Vilna Rabbinical School, resigning only when failing health made it necessary. Soon after this he devoted himself to poetry. His first collection of verse, *Poems in the Sacred Tongue* (3 vols., 1842-70), marked an epoch in New-Hebrew literature. It was everywhere greeted with great enthusiasm, and its author was surnamed the Father of Hebrew Poetry. Lebensohn soon came to be regarded as an exponent of a new Judaism, and in 1846 he presented to the celebrated Sir Moses Montefiore, then visiting Russia in behalf of the Jews, a written statement on the Jewish question, declaring the Jews blameworthy for their ignorance, deficiency in handicrafts, premature marriages, and, curiously enough, extravagance. These views he embodied in his allegorical drama, *Truth and Faith* (1867), the fundamental purpose of which was to harmonize science and religion on a rationalistic plane. Among his other works, mention must be made of his edition of Bensew's *Hebrew Grammar* (1874) and his collaboration on the 17-volume edition of the Bible (completed in 1853) with a German translation intended to familiarize students with that language, then the only approach to Western culture available to Russian Jews.

LEBENSOHN, MIOAH JOSEPH (1828-52), also known as MIKAL. A Russian Hebrew poet, the son of Abraham Bär Lebensohn. He was born at Vilna and received a good modern education—an advantage he enjoyed over all his contemporaries. After mastering Hebrew as a living tongue, he made a thorough study of German literature, rounding out his education by a course in philosophy at Berlin, under Schelling. Beginning verse making at the age of 12, he produced his first original poem at 16. When his translation of Schiller's version of two books of the *Æneid*, *Destruction of Troy*, appeared (1849), he was generally hailed as a new poet. Then came his collection of poems, *Shire Bat-Ziyon* (*Songs of the Daughter of Zion*, 1851; Ger. trans., 1859), generally considered a masterpiece. When his second volume of verse, *Kinnor Bat-Ziyon* (*The Harp of the Daughter of Zion*) was published, the young poet had already died of consumption. A complete edition of his works was brought out in 1895. Translations

have appeared in French, Russian, and German. Lebensohn's poetry excels even his father's in pathos, and it is an improvement in diction. He was the first Hebrew poet to apply the rules of modern prosody. Both his choice of subjects and his treatment were original and happy, while his melodious verse, his superb lyricism, and his poetic imagery have never been surpassed in Hebrew poetry.

LEBERT, la'bért, HERMANN (1813-78). A German physician. He was born at Breslau, was educated at Berlin, Zurich, and Paris, and in 1836 began to practice at Bex in Switzerland. The winters of 1842-45 he spent in Paris in pathological research, especially microscopical, and published the results in *Physiologie pathologique* (1845). In 1846 he undertook a zoölogical excursion in Switzerland. He settled in Paris in 1847 and stayed there until 1852, when he went to Zurich as clinical professor of the university and director of the hospital there. In 1859 he went to Breslau in the same capacity. He was one of the first to recognize and utilize the importance of histology for pathology. He made special studies of tuberculosis, cancer, and scrofula. His writings include: *Traité pratique des maladies scrofuleuses et tuberculeuses* (1849) and *des maladies cancéreuses* (1851); *Traité d'anatomie pathologique générale et spéciale* (1855-60); *Allgemeine Pathologie und Therapie* (2d ed., 1876); *Klinik der Brustkrankheiten* (1873-74); *Krankheiten des Magens* (1878).

LEBERT, SIEGMUND (1822-84). A German music teacher, born at Ludwigsburg. After studying music at Prague he settled in Munich, where he established himself as a pianist and teacher. In 1856 he founded, in conjunction with Stark and others, the Stuttgart Conservatory. In 1873 he received the honorary degree of Ph.D. from the University of Tübingen. He published, with Stark, *Grosse Klavierschule*, which was translated into Italian, English, French, and Russian (rev. by Max Pauer, 1904), an edition of Clementi's *Gradus ad Parnassum*, and an instructive edition of pianoforte classics. He died at Stuttgart.

LEBID IBN RABIA. See LABID IBN RABIA.

LEBLANC, GEORGETTE. See MAETERLINCK, GEORGETTE LEBLANC.

LEBLANC, le-blän', MAURICE (1864-). A French novelist. His sister, Georgette Leblanc, married Maurice Maeterlinck (for both, see MAETERLINCK). He early wrote a number of novels which, although interesting enough and for the most part well written, made no great impression. Beginning to write detective stories about 1906, he at once became well known. His Arsène Lupin stories supplanted the older detective stories of Emile Gaboriau, his gentleman thief Arsène Lupin quite overshadowing the Gaboriau detective Lecoq. These stories of Leblanc are comparable to Conan Doyle's Sherlock Holmes volumes in the gripping interest of well-worked-out and dramatically developed adventures. Leblanc was created Knight of the Legion of Honor. All of his Arsène Lupin stories have been put into English, a number of them by Alexander Teixeira de Mattos. He wrote: *Une femme* (1893); *Ceux qui souffrent* (1894); *L'Œuvre de la mort* (1896); *Les heures de mystère* (1896); *Arnette et Claude* (1897); *Les lèvres jointes* (1899); *Enthousiasme* (1901); *Gueule-rouge-80 chevaux* (1904); *Arsène Lupin* (1907); *Arsène Lupin contre Sherlock Holmes* (1908); *L'Aiguille creuse* (1909);

Nouvelles aventures d'Arsène Lupin. (1910); *La Frontière* (1911); *Le bouchon de cristal* (1912); *La confession d'Arsène Lupin* (1913).

LE BLANC, le blän', NICOLAS (1742-1806). A French physician, the inventor of a celebrated process for making soda from common salt. He was born at Issoudun, studied medicine and chemistry, and acted as surgeon to Philippe Egalité, the Duke of Orléans. In the eighteenth century most of the soda needed in the manufacture of glass and soap was obtained from *barilla*, a north-Spanish sea plant, the ashes of which contain a considerable percentage of soda. But during the second half of the century the supply of soda from this source had become insufficient, and in 1775 the French Academy offered a prize of 2500 livres for a method of making soda artificially from common salt. In 1789 Méthérie suggested changing common salt (sodium chloride) into sodium sulphate by means of sulphuric acid and heating the sodium sulphate with charcoal. The product, however, proved to be, not soda (i.e., sodium carbonate), but sodium sulphide. In 1791 Le Blanc conceived a modification of the second step in Méthérie's process, to consist in heating the sodium sulphate, not with charcoal alone, but with a mixture of charcoal and chalk (calcium carbonate). This solved the great problem, the chalk transforming Méthérie's sodium sulphide into the desired carbonate. Philippe Egalité soon built for Le Blanc a factory, and the state granted him patent rights for a period of 15 years. In 1793 Philippe met his death on the scaffold, and all his property, including the Le Blanc factory, was confiscated. When shortly afterward potash (the carbonate of potassium) had become scarce, owing to hindrance of transportation resulting from the wars of the Republic, a decree was issued making all methods for the manufacture of soda public property, and Le Blanc lost his patent rights. In 1799 the first factory was returned to him; but lack of means prevented him from setting it in operation, and in 1806 the great inventor, in a poor-house, committed suicide. For a period of 60 years, from 1824 to 1884, the Le Blanc process seemed the only possible one for use on a large industrial scale, and it yielded inestimable wealth. Since 1884 it has been gradually superseded by the Solvay process, in which sodium chloride (common salt) is changed to sodium bicarbonate by the action of ammonia and carbon dioxide.

LE BLANT, le blän', EDMOND FRÉDÉRIC (1818-97). A French archaeologist, born in Paris. He became interested in archæology during a visit to Rome in 1847 and afterward made a special study of Christian epigraphy and early Christian institutions in France. He became a member of the Academy of Inscriptions in 1867 and from 1883 to 1889 was director of the French School at Rome, replacing Geffroy. His works include: *Inscriptions chrétiennes de la Gaule antérieures au VIII^{ème} siècle* (1856-65); *Nouveau recueil des inscriptions chrétiennes de la Gaule* (1862); *Manuel d'épigraphie chrétienne* (1869); *Étude sur les sarcophages chrétiens antiques de la ville d'Arles* (1878); *Les sarcophages chrétiens de la Gaule* (1886); *Les actes des martyrs, a supplement to the Acta Sincera of Dom Ruinart* (1882); *L'Épigraphie chrétienne en Gaule et dans l'Afrique romaine* (1888); *Les persécuteurs et les martyrs aux premiers siècles de notre ère* (1893); and, with

Jacquemart, *Histoire artistique de la porcelaine* (1861-62).

LE BLOND, le blônd', ELIZABETH A. F. (MRS. AUBREY) (?-). A British Alpinist and author. Born in County Wicklow, Ireland, her father being Sir St. Vincent Bentinck Hawkins-Whitshed, Bart., she succeeded to the title of a Hanover baroness. Before marrying Mr. Le Blond, she had been the wife of Col. Frederick Burnaby and then of John Frederick Main. In 1907 she was chosen first president of the Ladies' Alpine Club, London. Previous to this date she had made numerous ascents, many of them on virgin peaks, including all the usual first-class climbs in the Swiss and Dauphiné Alps; she had explored and made first ascents of several glacier-clad peaks in Arctic Norway and had made numerous ascents in winter of high peaks until then unclimbed at that season. Besides many articles in leading English periodicals, she published: *The High Alps in Winter* (1883); *High Life and Towers of Silence* (1886); *Adventures on the Roof of the World* (1904); *The Story of an Alpine Winter* (1907); *Mountaineering in the Land of the Midnight Sun* (1908), all profusely illustrated with Mrs. Le Blond's own photographs (she was awarded a gold medal by the Royal Photographic Society). She also lectured much with her own slides. In other fields than mountaineering she wrote *A Guide to the Old Gardens of Italy* (1912), *The Life and Times (1715-1800) of Charlotte Sophie, Countess Bentinck*, an ancestress of hers (2 vols., 1912); and she translated and edited the autobiography of another ancestress, Princess Charlotte Amélie of Oldenburg.

LEBŒUF, le-bêf', EDMOND (1809-88). A marshal of France, born in Paris. He was educated at the Ecole Polytechnique and the school of artillery at Metz. He entered the army in 1832, and his services in Algeria (1837-41) made him colonel (1852). In that year he directed the French siege operations around Sebastopol and was made brigadier general (1854). He was attaché of the Russian Embassy in 1856, became general of division in 1857 and commander in chief of the artillery a year later, and did effective work with this arm at the victory of Solferino. In August, 1869, he became Minister of War and in the spring of 1870 was made marshal. Before the outbreak of the Franco-German War Lebœuf expressed his confidence in the preparedness of the French forces; summoned in April, 1870, before a committee of the French Legislative Assembly to report on the condition of the French army, he said: "We are ready; so ready that the war may last two years without our having need to buy so much as a gaiter button." Consequently, when the first disasters of the war revealed the true condition of affairs, the country was exasperated against him. He resigned from the ministry in August and assumed command of the Third Army Corps. He fought bravely at Vionville and Gravelotte and with the fall of Metz became a prisoner of the Germans along with Bazaine, whom he blamed for the capitulation. After the peace he lived in complete obscurity. He died June 7, 1888.

LEBON, le-bôn', FELIX FRÉDÉRIC GEORGES (1845-1907). A French general and tactician, born in Paris. He studied at the Ecole Polytechnique and the Ecole d'Application de l'Artillerie et du Génie. He was a lieutenant in the War of 1870 and became general of division in

1905. He collaborated on the *Revue d'artillerie* and wrote on artillery tactics, the use of dynamite, and numerous other topics; was a member of many military commissions, among others that of 1900-01 on new infantry regulations, and in 1907 was named member of the superior council of war. He was made a Commander of the Legion of Honor and was decorated by Belgium, Japan, Russia, Holland, Prussia, and other countries.

LE BON, le bôn', GUSTAVE (1841-). A French ethnologist and psychologist, born at Nogent-le-Rotrou. He was educated to be a physician, but practiced little. In 1884 he had charge of a government expedition to study the architecture of the Buddhist monuments in India. He wrote: *L'Homme et les sociétés* (2 vols., 1877); *Les premières civilisations de l'Orient* (1889); *Les monuments de l'Inde* (1894); *Lois psychologiques de l'évolution des peuples* (1895; Eng. trans., *The Psychology of Peoples*, 1898, reprinted 1912); *Psychologie des foules* (1895; Eng. trans., *The Crowd: A Study of the Popular Mind*, 7th ed., 1910); *Psychologie du socialisme* (1898; Eng. trans., *The Psychology of Socialism*, 1899); *L'Évolution des forces* (1899; Eng. trans., *The Evolution of Forces*, 1908); *Psychologie de l'éducation* (1904; 13th ed., 1909); *L'Évolution de la matière* (1905; Eng. trans., *The Evolution of Matter*, 1907); *La naissance et l'évanouissement de la matière* (1908); *La révolution française et la psychologie des révolutions* (1912; Eng. trans., *The Psychology of Revolution*, 1913).

LE BON, JOSEPH (1765-95). A French revolutionist. He was born at Arras and became a priest and professor of rhetoric at Beaune in 1789. Joining the revolutionary movement, he was elected a member of the Convention in 1793, was commissioned by that body to defend Cambrai against the Austrians, and this he successfully accomplished. His severe measures against the enemies of the Convention in the Department of Pas-de-Calais led to a violent denunciation of Le Bon by his political opponent, Guffroy. The latter finally succeeded in bringing about Le Bon's condemnation by the criminal tribunal of Somme, and he was executed.

LE BOULENGÉ, le bôw'lan'zhâ', PAUL EMIL (1832-1901). A Belgian artillery officer, born at Mesnil-Eglise. After long service he retired in 1897 with the rank of lieutenant general. He made many valuable discoveries in ballistics, especially the Le Boulengé chronograph, which he described in 1865, and wrote *Étude de balistique expérimentale* (1868) and *Description, maniement, et usage des télémètres de Le Boulengé* (2d ed., 1877). See BALLISTICS.

LE BOURGET-DRANCY. See BOURGET, LE.

LEBOUTHILLIER DE RANCÉ, le bôw'tê-yâ' de râ'n'sâ', D. A. J. See RANCÉ.

LE BRAZ, le brâs', ANATOLE (1859-). A French novelist, born at Duault. Educated at Paris and for many years a teacher in various schools and colleges, he finally became professor of French literature at the University of Rennes. He has described feelingly and truthfully Breton legends and customs. Thrice a visitor to the United States as lecturer for the Alliance Française, he had tremendous success in conveying to the American public the mysticism and grandeur of old Brittany. His works include: *Tryphina Keranglus* (1892); *La chanson de Bretagne* (1892); *La légende de la mort de*

Basse Bretagne (1893; Eng. trans., *Dealings with the Dead*, 1898); *Au pays des pardons* (1895; Eng. trans., *The Land of Pardons*, 1906), crowned by the French Academy; *Pâques d'Islande* and *Vieilles histoires du pays breton* (1897); *Le gardien du feu* (1900); *Le sang de la sirène* (1901); *La terre du passé* (1902); *Essai sur l'histoire du théâtre celtique* (1904); *Les contes du soleil et de la brume* (1905); *Armes d'occident* (1906); *Au pays d'exil de Chateaubriand* (1909); *Armes d'occident* (1912).

LEBRET, le-brâ', GEORGES (1853-). A French statesman. He was born at Etampes, studied law at Paris, and received the degree of LL.D. In 1879 he was sent by the Minister of Public Instruction on a mission to England and Scotland to report on leases and agricultural legislation and usages. Afterward he became a fellow in law at the University of Caen, where he was appointed professor of civil law, professor of criminal law (1885), and professor of financial legislation (1891). He held the offices of municipal counselor (1892-1900) and mayor (1892-96) in Caen and from 1893 to 1902 was deputy (Republican) from the Department of Calvados. Returning to Caen, he was reappointed to the chair of civil law. In 1898-99 he held the portfolio of Minister of Justice in Dupuy's cabinet. Lebrete became recognized as an authority on technical jurisprudence. His publications include *Etude sur la propriété foncière en Angleterre* (1882). He became editor of the *Revue critique de législation et de jurisprudence*.

LEBRIJA, lá-brě'há (Lat. *Nebriſsa-Veneria*). A town of Spain, in the Province of Seville, 44 miles south by west of Seville, on the railway between Seville and Cadiz (Map: Spain, B 4). It is pleasantly situated on the fertile slopes of the Sierra de Gibaldin and on the border of the extensive marshes around the mouth of the Guadalquivir, known as Las Marismas. It has a ruined castle, believed to date from the time of the caliphate, and a large church, originally a mosque, exhibiting a strange combination of the Arabic, Roman, and Gothic styles. It carries on a considerable trade in grain, wine, oil, and cattle. Pop., 1900, 11,127; 1910, 11,506. Lebrija is believed to have been founded by the Greeks in ante-Roman times, was a large and flourishing city during the time of the Moorish Empire, and was definitively captured by the Christians under Alfonso the Wise in 1264. It gained renewed celebrity as the birthplace of one of the leaders of the revival of learning, Antonio de Lebrija, or Nebrija (q.v.) (1444-1522), who published in 1492 the *Grammatica castellana* and the *Latin-Spanish Dictionary* (the *Spanish-Latin* part appearing in 1495), and collaborated on the production of the Complutensian Polyglot Bible, prepared at Alcalá de Henares by Cardinal Ximenes (q.v.).

LEBRIJA, or **LEBRIJA**, ELIO ANTONIO DE. See NEBRIJA, or NEBRIJA, ELIO ANTONIO DE.

LEBRUN, le-brün', CHARLES (1619-90). A French historical and portrait painter, architect, and decorator. He was born in Paris, Feb. 24, 1619. His predisposition towards art, which developed early, was discovered by the Chancellor Séguier, who placed him in the atelier of the painter Vouet and in 1642 sent him to Rome. In Rome he came under the influence of Nicolas Poussin. In 1642 he was again in Paris and was called upon to decorate the Hôtel Lambert and to repair the Petite Galerie du Louvre,

which had been injured by fire. The restoration of the Petite Galerie led to the construction of the Galerie d'Apollon above it, which Lebrun was employed to decorate. This work he left unfinished, but the numerous drawings from his designs which are in existence made it possible for Eugène Delacroix in the nineteenth century to complete the work according to the original intention.

The extraordinary power which Lebrun exercised during the reign of Louis XIV came mainly from the part he played in the establishment of the Academy of Painting and Sculpture. He was also instrumental in the establishment of the French Academy at Rome, and until his death was practically Minister of Fine Arts to the King, having the supervision of all his immense artistic undertakings. More than any other individual he was responsible for the "style Louis XIV."

After the completion of the Hôtel Lambert Lebrun was employed by the Chancellor Fouquet to decorate the new château of Vaux-le-Vicomte, designed by Louis Leveau. In 1662 he was appointed first painter to the King and placed in charge of the decoration of the palace and park of Versailles. He designed the fountains and statues of the park, decorated the vestibule of the palace, and in 1679 began the decoration of the great gallery with paintings of the deeds of Louis XIV. He was made director of the new manufacture of tapestries and furniture at Les Gobelins and as such exercised a dominating influence on the tapestries. Among the hundreds of tapestries produced under his direction, were the well-known series "History of the King," of "Alexander," of "Constantine," and of "Mel-eager." He even chiseled objects of art, beakers, cups, amphoras, designed furniture, plate, and other objects in the sumptuous taste of the day, the surviving engravings of which show decorative talent of a high order. He decorated the château des Sceaux for Colbert and designed some of its pavilions. Next to Versailles, Lebrun's most important work was the construction and decoration of the château of Marly, which has been destroyed, but many of his designs for the architecture have been preserved. After the death of Colbert his fortunes declined, and in consequence of the troubles brought upon him by the enmity of Louvois, Lebrun sickened and died, on Feb. 12, 1690.

He was an able and prolific painter, and his works show good composition and great inventive power. Although of good decorative effect, they are mannered; his drawing is superficial, and his coloring untrue to nature. The Louvre contains a large number of his works, the best known of which is the series of five pictures illustrating the "History of Alexander the Great." He is well represented in most of the principal European museums, especially in those of France.

Consult: Antoine Genevay, *Le style Louis XIV, Charles Lebrun, ses œuvres, son influence, ses collaborateurs, et son temps* (Paris, 1886); Henri Jouin, *Charles Lebrun et les arts sous Louis XIV* (ib., 1890); L. O. Merson, "Charles Lebrun," in the *Gazette des Beaux-Arts*, vol. xxii (3d series, ib., 1899); Pierre Maroel, "Charles Le Brun," in *Maîtres de l'art* (ib., 1909); the little volume on Le Brun in "Les Peintres célèbres" Series (ib., n. d.); and, for his tapestries, G. Lechevallier-Chevignard, *Tapisseries et documents décoratifs du style Louis*

XIV d'après Charles LeBrun et Picart (ib., n.d.).

LEBRUN, or **LE BRUN**, CHARLES FRANÇOIS, DUKE DE PIACENZA (1739-1824). A French statesman, born at Saint-Sauveur-Landelin, in the Department of Manche. He began to practice law in Paris in 1762. He began public life as secretary to the future Chancellor Maupeou, was made inspector of the crownlands (1768), and indirectly exercised great influence on the policy of the ministry of Louis XV. After the dismissal of the Maupeou ministry, in 1774, Lebrun was in retirement till 1789. At the outbreak of the Revolution he wrote a pamphlet, entitled *La voix du Citoyen*, which predicted the course of events, and was elected to the States-General, and in the Constituent Assembly he spoke often on matters of finance. He was made Governor of the Department of Seine-et-Oise in 1791 and distinguished himself by an orderly and vigorous administration. Twice arrested during the Terror, he was freed in 1795, and elected deputy to the Council of Five Hundred, becoming President in the following year. In 1799 he was reelected, acquired a pre-eminence in that body, and contrived to influence legislation. After the 18th Brumaire Napoleon made Lebrun Third Consul for his services during the coup d'état. In 1805-06 he negotiated the union of the Ligurian Republic with the French Empire and was made Duke of Piacenza (1808). In 1807 he reorganized the Cour des Comptes (the exchequer), but on the abolition of the *tribunat* by the Emperor retired to private life. He was called back in 1810 at the age of 71 to govern Holland after the abdication of Louis Bonaparte. He returned to Paris in 1813 and soon after, for his services to the Bourbons, was raised to the peerage. He went over, however, to Napoleon during the Hundred Days, and on the return of the Bourbons his name was struck from the list of peers, but restored in 1819. Lebrun published translations of Tasso's *Gerusalemme Liberata* (1774), the *Iliad* (1776), and the *Odyssey* (1776). His *Memoirs* appeared in 1829.

LEBRUN, MARIE LOUISE ELIZABETH VIGÉE. See VIGÉE-LEBRUN.

LEBRUN, PIERRE ANTOINE (1785-1873). A French poet and dramatist, born in Paris. During the campaigns of the Empire his patriotic odes *A la grande armée* (1805), *Sur la campagne de 1807* (1808), and on kindred subjects attracted considerable attention, and his plays won him a place in the Academy (1828). Among these plays may be mentioned *Ulysse* (1815), *Pallas* (1822), and especially *Marie Stuart* (1820). His poem *Voyage en Grèce* was published in 1828, and his works were collected in 1844-63.

LEBRUN, PONCE DENIS ECOUCHARD (called **LEBRUN-PINDARE**) (1729-1807). A French poet, born in Paris. He was educated at the Collège Mazarin and early began to write verses. Afterward he became secretary to the Prince de Conti. He lived in the gay literary society of the time. wrote letters and exchanged epigrams, and won the title of Pindar for the perfection and imagination displayed in his odes. He lacked the warmth and real feeling to make him a great poet, but his epigrams are models. His works were published with a notice by Ginguené in 1811, and his *Œuvres choisies*, with a biography by Desprez and Campenon, in 1821 and 1828.

LE CARON, le ká'rón', HENRI (1841-94). A

British government spy, born at Colchester, England. His true name was Thomas Miller Beach; but when the American Civil War broke out in 1861 he joined the Federal army under the name by which he was subsequently known. At the close of the war he had risen to the rank of major. While still in the army he joined the Fenian organization and later became a paid spy of the British government. He furnished information that led to the defeat of the Fenian invasion of Canada in 1870 and of the Riel rebellion in 1871. In 1889 his career as a secret-service agent was brought to an end when the nature of his work was disclosed in testimony for the London *Times* before the Parnell Commission. (See PARNELL, CHARLES STEWART.) He published *Twenty-Five Years in the Secret Service* (6th ed., 1892).

LE CARON, JOSEPH (?-1632). A French Recollect missionary to the Indians in America. He went with three other Franciscan Recollects to Canada in 1615, with other Franciscans built a monastery near Quebec, and penetrated in the same year to Lake Huron, which he was the first white man to reach. His mission was unsuccessful, as was a second attempt in 1623. He was sent to England after the capture of Quebec in 1629 and never succeeded in getting back to Canada. His studies of the Huron language were of value to his successors.

LE CATEAU. See CATEAU.

LECCE, lèt'chá. An episcopal see, the capital of the Province of Lecce, Italy, 24 miles by rail south of Brindisi, and 7 miles from the Adriatic (Map: Italy, G 4). Interesting buildings are the seventeenth-century cathedral of San Oronzo, the sixteenth-century church of Santa Croce; the sixteenth-century Prefettura, formerly a Celestine convent, containing a valuable collection of ancient vases, coins, and inscriptions; the seventeenth-century baroque church of San Domenico; the sixteenth-century hospital; and in the Campo Santo (cemetery) the remains of the church of Santi Nicola e Cataldo, built by the Norman Count Tancred in 1180. The streets are narrow and crooked. Lecce has a public garden, a technical school, a Gymnasium, a female normal school, a technical institute, a school of agriculture, a museum, and a provincial library of 10,000 volumes. It is famous for the high quality of its oil and for the great government tobacco factory. It has cotton, wool, soap, pottery, furniture, book, and leather manufactures, and the country produces grain, fruit, honey, cotton, hemp, tobacco, cattle, and sheep. The ancient city here was called Lupia, and in near-by Rudia (now the village of Rugge) Ennius (q.v.) was born in 239 B.C. Pop., 1901, 32,687; 1911, 36,222. Consult: S. Simone, *Lecce e i suoi dintorni descritti ed illustrati* (Lecce, 1874); Cosimo de Giorgi, *Lecce sotterranea* (ib., 1907); M. S. Briggs, *In the Heel of Italy: A Study of an Unknown History* (New York, 1911).

LECCO, lèk'kò. The capital city of the Province of Como, Italy, on the southeast arm (called Lake of Lecco) of Lake Como (q.v.), 32 miles by rail north of Milan (Map: Italy, B 2). It has statues of Garibaldi and of Manzoni, in whose *I Promessi Sposi* the locality is beautifully described. Over the Adda, which issues from Lake Como here, there is a 10-arch stone bridge, with towers at each end, built in 1385. There are a city hospital, an orphan asylum for girls, a technical school, an industrial school,

a city library, a theatre, and a chamber of commerce and arts. Industrially Lecco is important for its manufactures of iron, tin, wire, silk, cotton, copper and brass ware, olive oil, and candles, and is a good cattle market. Pop. (commune), 1901, 10,275; 1911, 12,146. In the Middle Ages the city was fortified and the seat of a count until the twelfth century, when it came into the possession of Milan. April 26, 1799, the French under Serrurier were defeated here by the Austrians and Russians.

LECCO, LAKE OF (It. *Lago di Lecco*). The southeastern arm of Lake Como (q.v.), Italy.

LECH, lēk (Lat. *Licis*). A right tributary of the Danube and a former boundary between Bavaria and Swabia. It rises in the Lake of Formarin in Vorarlberg, Tirol, at an altitude of about 6000 feet (Map: Germany, D 4). Its course in the mountain ranges of Tirol is tortuous and swift and on entering Bavaria it forms the finest rapids in Germany. Even in its course through Bavaria the river retains the character of a mountain stream and in consequence is not navigable. It joins the Danube at the ruined castle of Lechsend after a course of about 180 miles and a total descent of over 4600 feet. Its chief tributaries are the Vils and the Wertach. Here, in 1632, Gustavus Adolphus defeated the Imperialists under Tilly, who was mortally wounded. See **LECHFELD**.

LE CHAPELIER, le shā'p'lyā', ISAAC RENÉ GUY (1754-94). A French revolutionist. Born at Rennes, he became an advocate. In 1789 he was elected by the Third Estate to the States-General, and in August of that year he became President of the Constituent Assembly. He had an important share in drawing up the new constitution and was one of the founders of the Breton Club. Frightened by the revolutionary excesses of 1791, Le Chapelier became more moderate, actively opposed Robespierre, and urged control of the revolutionary clubs. A visit to England in the interests of law clients served as a pretext for his adversaries to denounce him as an émigré. He was condemned to death by the Revolutionary Tribunal and executed at Paris.

LE CHÂTELIER, le shā't'lā', HENRI LOUIS (1850-). A French chemist. He was educated at the Collège Rollin, at the Ecole Polytechnique, and at the Ecole des Mines, where he became professor of chemistry in 1878. In 1898 he was appointed professor of mineralogical chemistry in the Collège de France. He invented several useful pieces of apparatus for experiments in physics and chemistry. A Chevalier of the Legion of Honor and a member of the Academy of Sciences, he served as president of the Société de Minéralogie in 1898 and in 1907 as president of the Société de Physique. His writings include: *Cours de chimie industrielle* (1896; 2d ed., 1902); *High Temperature Measurements*, translated by G. K. Burgess (1901; 2d ed., 1902); *Recherches expérimentales sur la constitution des mortiers hydrauliques* (1904; Eng. trans., 1905); *Leçons sur le carbone* (1908); *Introduction à l'étude de la métallurgie* (1912); *La Silice et les silicates* (1914).

LECHEVALIER, le-she-vāl'yā', JEAN BAPTISTE (1752-1836). A French classical archaeologist. He was born at Treilly, Normandy, France, and was educated for the ministry. In 1784 he accompanied the Count of Choiseul-

Gouffier as secretary to the Levant and with him made diligent researches in the plain of Troy (1784-86); he held that the site of Troy was to be found on the hills above Bunárbashi. He was director of the Library of Ste. Geneviève in Paris from 1808 until his death. Of his works, the best known are his *Voyage dans la Troade* (1800; Eng. trans. by Dalzel, under the title of a *Description of the Plain of Troy*), and *Ulysse-Homère* (1829), in which he asserts that Ulysses was the author of the *Iliad* and the *Odyssey*. Consult Noël, *Jean-Baptiste Lechevalier* (Paris, 1840).

LECHFELD, lēk'fēlt. A plain in Bavaria, south of Augsburg, on the banks of the river Lech, where (1110) the Great (q.v.), Aug. 10, 955, inflicted a crushing defeat upon the Hungarians or Magyars. This defeat checked their incursions and caused them to give up their plundering expeditions, which had long been a scourge to Europe and especially to Germany.

LECHFORD, lēch'fērd, THOMAS (c.1590-c.1645). The first lawyer in Boston. He was born in London, England, and before leaving that country he belonged to the legal profession and was a member of Clement's Inn. It was probably the assistance which he gave to a barrister named Prynne, who was found guilty of libel by the Star Chamber, that got him into trouble with the home authorities and led to his seeking an asylum in America, where he arrived in 1638. The Massachusetts government also looked upon him with small favor, not because of his politics, but because of his profession and his religious views. Unable to secure any cases in the courts, he was, to quote his own words, "forced to get his living by writing petty things, which scarce found him bread." After three years of this unhappy existence he returned to England in 1641 and there published a book entitled *Plain Dealing, or, News from New England* (1642), which is valuable for its light on early Colonial life in Massachusetts. It was reissued in 1644 under the title *New England's Advice to Old England* and again in 1867 with notes and an introduction by J. Hammond Trumbull. He also wrote a journal of his life in Boston. Of his adventures after his return nothing is known except what is contained in the single phrase of John Cotton's that he "put out his Book (such as it is) and Soon after dyed."

LECHLER, lēk'lēr, GOTTHARD VICTOR (1811-88). A German Protestant theologian, born at Kloster Reichenbach. He studied at Tübingen (1829-34), was vicar of Dettingen in 1835, in 1853 was made dean of the diocese of Knittlingen, and in 1858 became pastor at St. Thomas and professor at Leipzig. He took some part in politics as a member of the First Chamber of the Saxon Parliament. In 1880 he became ecclesiastic privy councillor and three years afterward retired from his duties as pastor. His works include: *Geschichte des englischen Deismus* (1841); *Das apostolische und das nachapostolische Zeitalter* (1851; Eng. trans. from the 3d Ger. ed. by Lorimer, 1886); *Geschichte der Presbyterial- und Synodalverfassung seit der Reformation* (1854); *Der Kirchenstaat und die Opposition gegen den päpstlichen Absolutismus im Anfange des vierzehnten Jahrhunderts* (1870); *Johann von Wiclif und die Vorgeschichte der Reformation* (1873; trans. by Lorimer, 4th ed., 1904); *Johannes Huss* (1890; Eng. trans., 1891).

LECKY, WILLIAM EDWARD HARTPOLE (1838-1903). An Irish historian and publicist, of Scottish descent, born at Newtown Park, near Dublin, March 26, 1838. While acquiring an academic training at Cheltenham College and at Trinity College, Cambridge, and while making some preparation for the clerical profession, he centred his interest in the literature and politics of Ireland and at the same time traveled much on the Continent. He was still a student at college when he published his first book, *The Religious Tendencies of the Age* (1860); and the following year he published *The Leaders of Public Opinion in Ireland*. In 1865 the issue of his *History of the Rise and Influence of the Spirit of Rationalism in Europe* made a marked impression on the literary world, mainly on account of the evidence which it afforded of extraordinary erudition and profound contemplation. This impression was sustained by his subsequent work, *History of European Morals from Augustus to Charlemagne* (1869), though in a less degree, on account of the nature and scope of its subject. Nearly 10 years were employed by Lecky in studies and investigations preparatory to the publication of his *History of England in the Eighteenth Century* (1878-90). In 1892 he was offered the regius professorship of history at Oxford, but he declined to accept. He was elected to Parliament for Dublin University in 1895 and reelected in 1900. In 1897 he was made Privy Councilor on account of his "very great literary eminence." After 1886 he spoke and worked for the Liberal Unionists. He died Oct. 22, 1903. New editions of his histories of England (7 vols.) and Ireland (5 vols.) were published in New York in 1893; and his later works include: *Poems* (1891); *The Political Value of History* (1893); *Democracy and Liberty* (1896); *The French Revolution* (1904); *Historical and Political Essays* (1908). Consult *A Memoir of . . . William Edward Hartpole Lecky*, by his wife (London, 1909), and J. F. Rhodes, "William Edward Hartpole Lecky," in *Historical Essays* (New York, 1909).

LECLAIRE, le-klâr', EDMÉ JEAN (1801-72). A French reformer, known chiefly through his experiments in profit sharing. He started in business as a house painter in Paris in 1827. The idea of profit sharing was first suggested to him in 1835, and in 1842 he announced his purpose to share the profits of his establishment with his employees and soon divided 11,866 francs among them (about \$50 each), the sums varying according to the yearly wage. In 1838 he had established a mutual aid society, which was reorganized in 1853, from which date it was maintained out of the profits of the establishment instead of from contributions of members. In 1864 retiring pensions were substituted for the right to a division of the funds of the mutual aid association. He became the Maire of Herblay in 1865 and died there Aug. 10, 1872. The month before his death the Maison LeClaire divided \$10,000 among 600 workmen. The company which he founded is still prosperous and continues to follow the plan of distribution instituted by LeClaire. See **PROFIT SHARING**.

LECLANCHÉ (le-klan'shâ') **CELL**. See **VOLTA CELL**.

LE CLEAR, le klër, THOMAS (1818-82). An American genre and portrait painter, born in Oswego, N. Y. He was self-taught and first made a reputation by painting portraits, while in London, Can., about 1832. Afterward he

lived principally in New York City and Buffalo, but made occasional trips abroad, especially to England, where he frequently exhibited at the Royal Academy. He was elected to the National Academy in 1863. Among his genre pictures are "The Itinerant," "Young America," and "The Reprimand," purchased by the American Art Union. His portraits, faithful, expressive, and strongly modeled likenesses, but of uncertain technique and uneven merit, include those of General Grant, President Arthur, Edwin Booth, Millard Fillmore, Bayard Taylor, Daniel Dickinson (1870), Parke Godwin (1877), William Page (in the Corcoran Gallery at Washington), William Cullen Bryant (1880), S. R. Gifford (1881), and George Bancroft (in the Century Club, New York City).

LECLERC, le-klâr', CHARLES VICTOR EMANUEL (1772-1802). A French general, born at Pontoise in the Department of Seine-et-Oise. He joined the cavalry service in 1791 and at the siege of Toulon (1793) attracted the attention of Bonaparte, who took him to Italy as his adjutant in 1796 and made him brigadier general after Leoben. Soon afterward he married Pauline Bonaparte. He accompanied Napoleon to Egypt, returned with him, and helped him on the 18th Brumaire. In 1800 he fought at Fleurus and Hohenlinden under Moreau. In 1801 he was dispatched with an army of 20,000 men against Toussaint l'Ouverture, the negro Governor of Haiti. After losing half his army, mostly by the fever, he forced Toussaint to capitulate. The great negro leader was subsequently seized and sent to France. Leclerc was presently stricken down with yellow fever and died in December, 1802.

LE CLERC, GEORGE LOUIS. See **BUFFON, COMTE DE**.

LE CLERC, le klêrk, JEAN, or JOHANNES CLERICUS (1657-1736). A Swiss Protestant scholar. He was born at Geneva, where his father was professor of Greek. From an early period he showed a particular aptitude for the study of ancient languages. He also paid great attention to theology. Before he was 20 Le Clerc had imbibed Socinian opinions in religion. He also denied the special inspiration of the Bible. In 1678 he went as tutor to Grenoble; in 1680 he returned to Geneva and was ordained a minister. All the while his objections to the accepted theology of his associates had been growing; under the name of Liberius de Sancto Amore, in 1679, he wrote 11 letters against the errors of the scholastic theologians as the partisan of the Dutch Remonstrants. In the latter part of 1681 Le Clerc returned to Grenoble and thence went to London, where he preached six months to the Walloon and Savoy congregations. He was appointed professor of philosophy, classical literature, and Hebrew at the Remonstrant Seminary of Amsterdam in 1684; later (1712) of Church history. He had to retire in 1728 in consequence of a paralytic stroke, and for eight years before his death was much weakened in mind. Le Clerc's writings are very numerous. Seventy-three separate publications have been enumerated by Haag, *France Protestante*, these include a commentary on the entire Bible (1693-1731), which, to a certain extent, was a forerunner of modern Biblical studies—it assailed traditional views and urged the necessity of scientific inquiry into the origin of the books of the Bible. LeClerc's greatest service to posterity, however, was the publication of a quar-

terly, the *Bibliothèque universelle et historique* (25 vols., 1686-93), followed by the *Bibliothèque choisie* (1703-13) and the *Bibliothèque ancienne et moderne* (1714-27). His editions of several of the ancient classics and of the apostolic fathers (1698; 2d ed., 1724) prove both his learning and acumen, while his *Ars Critica* (3 vols., 1712-30) and *Epistolæ Criticæ et Ecclesiasticæ* had considerable influence in his time and are still not without value. His collected works appeared at Amsterdam in four volumes. A number of his writings, including his *Harmony of the Gospels* and *Twelve Dissertations* from his *Genesis*, were published in English during his lifetime. Consult Van der Hoeven, *De Johanne Clerico* (Amsterdam, 1845).

LECLERC, JOSEPH VICTOR (1789-1865). A French classical scholar, born in Paris. In 1824 he was called to the chair of Latin eloquence at the Faculté des Lettres of Paris, and in 1834 he was admitted to the Academy of Inscriptions. His chief publications were his *Nouvelle rhétorique française* (1822; 11th ed., 1850); *Des journaux chez les Romains* (1838); and a translation of Cicero, *Œuvres complètes de Cicéron* (30 vols., 1821-25; 2d ed., 35 vols., 1823-27). He also edited volumes xx-xxiii of the *Histoire littéraire de la France* (1842-56). Consult Ernest Renan, "Joseph Victor Leclerc," in the *Revue des Deux Mondes* (Paris, 1868).

LECLERC, SÉBASTIEN (1637-1714). A French engraver, born in Metz. He received his only instruction from his father, a jeweler, and began to execute plates at an early age, although he later devoted himself principally to engineering and mathematics. Lebrun induced him to return to his original profession of engraving. In 1670 he received lodging at the Académie, in the same year became cabinet engraver, and in 1672 entered the Royal Academy, where he was professor of geometry and perspective. Leclerc left a large number of plates, most of them after his own designs. His smaller pieces are the best and reveal his facility for design and the precision and brilliancy of his style. The most noted of his plates are 39 for Benserade's *Ovid* (1676); "The Passion," 36 plates, dedicated to Madame de Maintenon (1692); "Les grandes conquêtes du roi" (1687); and "Les petites conquêtes du roi" (1702). He wrote: *La pratique de la géométrie* (1669); *Discours touchant le point de vue* (1679); *Traité d'architecture* (1714); and other works. Jombert published a catalogue of his plates in 1774.—His son SÉBASTIEN (1676-1763) was a painter, and so also was his grandson, JACQUES SÉBASTIEN (1734-85), who became professor at the Royal Academy. The Metropolitan Museum, New York, possesses "The Flutist" by him. Consult Mézume, *Sébastien Leclerc et son œuvre* (Paris, 1877).

LECLERCQ, le-klérk', MICHEL THÉODORE (1777-1851). A French dramatist, born in Paris. From 1810 to 1819 he held a small office in the revenue service. He wrote short stories and the novel *Le château de Duncan*, but is best known for his *Proverbes dramatiques*, salon comedies, written in the style of his predecessor Carondelet and marked by piquant dialogue and vivid character portrayal. These include *L'Humoriste*, *L'Intrigant malencontreux*, and *Le retour du baron*. A collected edition was published in 1823-26 and *Nouveaux proverbes dramatiques* in 1833.

LECLERCQ, ROSE (1845-99). An English

actress. She was born in Liverpool, of a theatrical family. After appearing in London as a dancer, she made, in 1861, a hit in Brougham's *Playing with Fire*. The following years brought her popularity in many parts, such as Eliza in *After Dark* (1869), Claire in *The Shaughraun* (1875), and later Lady Bawtrey in *The Dancing Girl* (1891). Her last original part was Mrs. Beechinnor in *Manœuvres of Jane*, by Henry Arthur Jones, produced at the Haymarket in 1898. Among her Shakespearean rôles were Desdemona, Mrs. Ford, and later Mrs. Page in *The Merry Wives of Windsor* and Olivia in *Twelfth Night*.

LE CLERQ, CHRÉTIEN (c.1630-c.1695). A French missionary, born at Artois. He was an ardent member of the Recollect Order of Franciscans and in 1651 went as a missionary to Canada. After 10 years of labor among the Indians, on the island of Gaspé, he returned to France, got permission to build a house for the Recollects in Montreal, and returned to Gaspé in 1662; but from that time on accomplished little in his missionary labors. Afterward he returned to France and became guardian of the convent of Lens. He wrote *Nouvelle relation de la Gaspésie* (1691) and *Establishment of the Faith in New France* (Eng. trans. by John G. Shea, 1881). His history is of no great value, as it deals only with the work of Frontenac, who opposed the Jesuits and favored the Recollects, and from the ecclesiastical side is tinged with partisanship. Consult R. G. Thwaites, *Jesuit Relations* (Cleveland, 1896-1901).

LECOQC, le-kôk', (ALEXANDRE) CHARLES (1832-1911). A French musical composer, born in Paris. He was a pupil of the Conservatory and won the prize for harmony in 1850. He began almost immediately to write operettas, a genre with which he was afterward identified. *Fleur de thé* (1868) was his first real success, soon followed by his most popular work, *La fille de Mme. Angot* (1873). *Groflé-Grofla* (1874), *La jolie Persane* (1880), *L'Oiseau bleu* (1884), and many others came in rapid succession. His music is always melodious, gay, and lively, and written with a skill and care not generally found in lighter operas. Other and smaller compositions include songs and salon music.

LECOINTE, le-kwânt', GEORGES (1869-). A Belgian naval officer and scientist, born in Antwerp and educated at the military academy in Brussels. As second in command he was the captain of the *Belgica* in the Belgian Antarctic expedition of 1897-99, the first expedition to winter in the Antarctic Ocean. Lecoince added much to scientific results by his accurate and extensive astronomical and magnetic observations. (See POLAR RESEARCH.) Largely through his efforts the International Polar Commission, which first met at Brussels, was formed in 1908. After 1900 he was director of the Royal Observatory of Belgium, at Uccle. Of his technical works the most important are *La navigation astronomique et la navigation estimée* (1896) and *Travaux hydrographiques* (1903).

LECOMPTON. A city in Douglas Co., Kans., on the Kansas River, 11 miles west by north of Lawrence, on the Atchison, Topeka, and Santa Fe Railroad (Map: Kansas, G 4). Until 1903 it was the seat of Lane University, founded in 1865. Lecompton (named in honor of Judge S. D. Lecomte, prominent in the early history of Kansas) was settled in 1854 by pro-

slavery men and during the contest for the control of Kansas between the proslavery and free-State settlers was the headquarters of the former. It was here that in October-November, 1857, the convention met which drew up the Lecompton Constitution (q.v.). (See KANSAS.) The city owns an electric-light plant. Pop., 1900, 408; 1910, 386.

LECOMPTON CONSTITUTION. In American history, a form of government for the State (then the Territory) of Kansas, adopted by a convention, of disputed legality, held at Lecompton, Kans., October-November, 1857. The Lecompton Constitution declared the right of slaveholders in Kansas to their slaves to be inviolable, prohibited the Legislature from passing any act of emancipation, and forbade any amendment of the instrument before 1864. The Constitution as a whole was not submitted to the people, they were only to be allowed to vote upon the clause whether they would have the "Constitution with slavery" or the "Constitution with no slavery," the instrument being so worded that in either case it would fasten slavery upon the State, there being a clause to the effect that the right to slaves already held in Kansas was inalienable. The Constitution was thus formally submitted to the electors Dec. 21, 1857. For its adoption "with slavery" the vote returned was 6226, more than half of which was from the counties along the Missouri border, whose whole number of voters, according to the census, did not exceed 1000. For the Constitution "with no slavery" 569 votes were returned, but the great body of the free-State men declined to vote at all, regarding the election as a fraud and a farce. The legally constituted Territorial Legislature, controlled by the free-State men, submitted the same instrument to the consideration of the people of Kansas, Jan. 4, 1858, and the result was a vote of 10,226 against it and of less than 200 in its favor. The question was carried to Congress, where the Senate voted to admit Kansas with this Constitution. The House, however, rejected this bill, and after a conference of committees both Houses agreed on the so-called English Bill. This, among other things, provided for a second submission of the Lecompton Constitution, the acceptance of which by the people was made a *sine qua non* as regards the immediate admission of Kansas into the Union. On Aug. 2, 1858, the Constitution was again rejected by a majority of 10,000. This virtually ended the struggle for the establishment of slavery in Kansas. An antislavery Constitution was framed and adopted in 1859, and the State was admitted to the Union, Jan. 29, 1861. See KANSAS.

LECOMTE, le-kônt', PAUL HENRI (1856-). A French botanist, born at Saint-Nabord (Vosges). He taught in several lycées before being appointed (1906) to the chair of botany at the Museum of Natural History. Several prizes and medals were awarded him. He founded (1897) and was the first editor of *La Revue des Cultures Coloniales* and wrote: *Les textiles végétaux et leur examen microchimique* (1892); *Les textiles végétaux des colonies* (1895); *Le cacao* (1897); *Le café* (1899); *Le coton* (1899); *Le vanillier* (1900); *Le coton en Egypte* (1904); *Anacardaires de l'Afrique occidentale* (1905). He also wrote several treatises on botany for secondary schools.

LECOMTE DU NOUY, le-kônt' du nouÿ,

JULES JEAN ANTOINE (1842-). A French historical and genre painter, born in Paris. He was a pupil of Gleyre, Gérôme, and Signol at the Beaux-Arts, where he won the second Prix de Rome in 1872 with his "Death of Jocasta" (Arras Museum). This was followed by "Invocation of Neptune" (1866, Lille Museum), and among his subsequent productions exhibited annually in the Salon are to be especially noted "Love which Passes and Love which Remains" (1869, Boulogne Museum); "The Sorcerer" (1870, Rheims Museum); "Bearers of Evil News before Pharaoh" (1872, Luxembourg). In fresco he painted "Two Episodes in the Life of St. Vincent de Paul" (1876-79, church of the Trinity, Paris). Although somewhat conventional in style and dull in coloring, all his works are to be commended for correct drawing, subtle characterization of the figures, and sound archaeological knowledge. He painted also excellent portraits, among his sitters being the sovereigns of Rumania (including Carmen Sylva) and Servia, and was awarded medals in London (1862), Paris (1866, 1869, 1872, 1889), and Vienna (1873).

LE CONTE, lê kônt', JOHN (1818-91). An American physicist, the son of Louis Le Conte. He was born in Liberty Co., Ga.; graduated at Franklin College (now the University of Georgia) in 1838 and at the College of Physicians and Surgeons, New York, in 1841; became professor of natural philosophy and chemistry in Franklin College in 1846; and resigned in 1855 to become lecturer on chemistry in the College of Physicians and Surgeons, New York. In 1856 he became professor of natural and mechanical philosophy in South Carolina College at Columbia; in 1869 he was appointed professor of physics and industrial mechanics in the University of California at Oakland; in 1876-81 was president of that institution and in 1881 resumed the chair of physics there. He was a member of the principal scientific associations and published, besides numerous papers and magazine articles, *Philosophy of Medicine* (1849) and *Study of the Physical Sciences* (1858).

LE CONTE, JOHN EATON (1784-1860). An American naturalist, brother of Louis Le Conte. He was born near Shrewsbury, N. J., entered the United States army in 1818 as a topographical engineer, and made many surveys and plans for fortifications until 1831, when he was retired with the rank of major. He devoted much of his time to extensive studies in natural history, and published: *Monographs of North American Species of Utricularia, Gratiola, and Ruellia*; "Observations of the North American Species of Viola" and "Descriptions of the Species of North American Tortoises" in the *Annals of the New York Lyceum of Natural History*; "A Monograph of North American Histeroides," in the *Boston Journal of Natural History*; and "Descriptions of Three New Species of Arvicola, with Remarks upon Other North American Rodents," in the *Proceedings of the Academy of Natural Science of Philadelphia*.

LE CONTE, JOHN LAWRENCE (1825-83). An American entomologist, son of Major John E. Le Conte. He was born in New York City, graduated at Mount St. Mary's College, Emmitsburg, Md., in 1842, and at the New York College of Physicians and Surgeons, New York, in 1846. He made scientific excursions in Western States when a student, and afterward traveled extensively in North and Central America,

transmitting the results of his observations to scientific societies. He entered the army as surgeon of volunteers in 1862 and was promoted to medical inspector in the regular army with the rank of lieutenant colonel, which position he retained until the end of the war. In 1874 he served as president of the American Association for the Advancement of Science. From 1873 till his death he was chief clerk of the United States mint at Philadelphia. He devoted his attention particularly to the study of entomology and became widely recognized as an authority in that subject. In the Collections of the Smithsonian Institution are published his *Classification of the Coleoptera of North America* (part i, 1862; part ii, 1873); *List of Coleoptera of North America* (1866); *New Species of North American Coleoptera* (part i, 1866; part ii, 1873).

LE CONTE, JOSEPH (1823-1901). An eminent American geologist, the son of Louis Le Conte. He was born in Liberty Co., Ga., and graduated at Franklin College (University of Georgia) in 1841. After receiving a medical degree at the College of Physicians and Surgeons in New York City (1845), he returned to his native State to practice at Macon. In 1850 he entered the Lawrence Scientific School, Harvard, for the purpose of studying under Agassiz; the next year, after graduating B.S., he accompanied Agassiz on a scientific and exploring expedition to Florida. He served successively as professor of natural science in Oglethorpe College, professor of natural history in Franklin College, and from 1857 to 1869 as professor of chemistry and geology in the University of South Carolina. In 1869 he was appointed to the chair of geology in the University of California, which office he retained until his death. Professor Le Conte did much to popularize the study of geology in America and also contributed many valuable philosophical papers to geological literature. He was elected vice president of the International Geological Congress in 1891, in the following year president of the American Association for the Advancement of Science, and in 1896 president of the Geological Society of America. The more important of his publications are: *Religion and Science* (1873); *Elements of Geology* (1878, 5th ed., rev. by H. L. Fairchild, 1903); *Sight* (1881); *Compend of Geology* (1884); *Evolution: Its Nature, its Evidence, and its Relation to Religious Thought* (1887). Besides important papers contributed to geological journals, he wrote many essays on biology, philosophy, optics, and other subjects. Consult S. B. Christy in *Transactions of the American Institute of Mining Engineers*, vol. xxxi (New York, 1902), including bibliography, and *Autobiography*, edited by W. D. Arnes (ib., 1903). A review of his geologic work is printed in the *Bulletin of the Geological Society of America*, vol. xxvi (ib., 1915).

LE CONTE, LOUIS (1782-1838). An American naturalist, father of Joseph Le Conte. He was born near Shrewsbury, N. J., of Huguenot descent, graduated at Columbia in 1799, studied medicine with the celebrated Dr. David Hosack, and settled in Georgia, taking care of his father's estate and establishing a botanical garden, where he cultivated rare bulbous plants obtained from the Cape of Good Hope. He devoted considerable time to mathematics and zoology as well as botany. His manuscripts were lost at the burning of Columbia, S. C., in 1865.

LECONTE DE LISLE, le-kônt' de lêl, CHARLES MARIE (1818-94). The greatest French poet of the modern Parnassian school, born at Saint-Paul, on the Ile de Bourbon, now Réunion, Oct. 23, 1818. His youth in the tropics fostered his inborn love for the beauty of nature, but his restless imagination urged him to travel. Declining to follow his father's occupation as a planter, he went to France, studied law at Rennes, traveled widely, and at 30 settled in Paris. He presently sacrificed his paternal allowance by supporting a servile insurrection in Réunion. The only milestones in his uneventful life were the honors that slowly came to him—a post in the Luxembourg Library (1873), Officer's rank in the Legion of Honor, election to the Academy (1887). He became the centre of a school of young poets who recognized in the genial friend the master's authority. His first noteworthy volume, which waited several years for a publisher, was *Poèmes antiques* (1852), followed in 1854 by *Poèmes et poésies*, and in 1862 by *Poèmes barbares*, which won an academic prize of 10,000 francs, and by *Poèmes tragiques* in 1884. A posthumously published volume of *Derniers poèmes* (1895) contains several interesting critical essays on Leconte de Lisle's lyric forerunners. He was also the moving spirit of a series of volumes, *Le parnasse contemporain* (1866, 1869, 1876), in which the poets of his school practiced the refinements of their art. Here some of his own most remarkable poems first appeared. Leconte de Lisle contributed also to literature the first fairly accurate translations in French of the *Iliad* (1867), the *Orphic Hymns* (1869), *Hesiod* (1869), the *Odyssey* (1870), *Horace* (1873), *Sophocles* (1877), and *Euripides* (1885). He wrote also two dramas in imitation of the Greek, *Les Erinnyes* (1872) and *L'Apollonide*, based on the *Ion* of Euripides. The earlier of these translations won Leconte de Lisle a small pension from the Empire, and from these classical studies he drew the marrow of his exquisite culture, the pagan element in which appears least attractively in an *Histoire du christianisme* and a *Catéchisme républicain*, both published anonymously. The poems are objective in tone and scholarly in purpose, seeking, as he said, to unite, if not to mingle, art and science. His aim through all his original verse is to show the gradual unfolding of the ideal life and the reachings of religious thought into the legendary past and the hidden future of the race. He is the most stately, brilliant, self-possessed of French poets, with perfect control of all the processes of his art, but a poet of protest and disillusionment, pessimistic, skeptical. He died at Louveciennes, July 17, 1894.

Bibliography. Edward Dowden, "On Some French Writers of Verse," in *Studies in Literature, 1789-1877* (5th ed., London, 1889); Paul Bourget, *Nouveaux essais de psychologie contemporaine* (Paris, 1887); Jules Lemaitre, *Contemporains*, vol. ii (12th ed., ib., 1890); Ferdinand Brunetiere, *Nouveaux essais sur la littérature contemporaine* (ib., 1895); G. J. M. Pellissier, *Mouvement littéraire* (trans., New York, 1898); J. Domy, *Leconte de Lisle* (1909); J. H. Whiteley, *Etude sur la langue et le style de Leconte de Lisle* (Oxford, 1910), containing a bibliography; Francis Grierson, *Parisian Portraits* (London, 1913). Biographical reminiscences are in *Revue des Deux Mondes* (Paris, May, 1895) and *Revue Bleue* (ib., June, 1895).

LECOT, le-kô', VICTOR LUCIEN SULPICE, CARDINAL (1831-1908). A French Roman Catholic cleric, born at Montescourt and educated at the minor seminary at Compiègne and at the grand seminary at Beauvais. He was appointed Bishop of Dijon in 1886, Archbishop of Bordeaux in 1890, and was created Cardinal in 1893. Although he condemned the Church Separation Law of 1901, he advocated a policy of conciliation that would enable the church to meet the new situation in France and was generally in sympathy with the sagacious and constructive endeavors of Aristide Briand (q.v.) to establish a programme that the church could accept.

LECOUVREUR, le-kôö'vrêr', ADRIENNE (1692-1730). A French actress, celebrated alike for her brilliant dramatic gifts and the tragic ending of her life of pleasure. She was born at Damery, near Epernay, April 5, 1692. Her father, a hatter, went to Paris to better his trade. Near the theatre of the Comédie Française, Adrienne, then a grown girl and a laundress, organized among the neighbors a little private theatre, which was so successful as to draw from the comedians of the Royal Theatre a complaint against it as an unauthorized rival. The amateur performances thus closed, Adrienne was taken by a kind prior to the actor Legrand, who was struck with her talent and beauty and gave her lessons in elocution. She played at Lille, Strassburg, and elsewhere, and after some years of provincial successes was called in 1717 to the Comédie Française, where she made her debut in Crébillon's *Electre*. She at once won the first place among French actresses. Her force of character, high spirit, and noble beauty gave all her impersonations the stamp of her individuality. Her favorite rôles were those of exalted passion, like Pauline, Monime, Bérénice, Athalie, and Phèdre. She delighted Paris, and for 13 years her real life, like her acting, was a stormy elysium, filled with the loves and galantries of the most eminent men of her time. She died in Paris, March 20, 1730, poisoned, it is said, by means of a bouquet of flowers sent by the Duchess de Bouillon, a rival mistress of Maurice de Saxe. Her story is the subject of a well-known drama by Scribe and Legouvé, which was first acted at the Théâtre Français by Rachel in 1849.

LECOY DE LA MARCHE, le-kwâ' de lá mârsh, ALBERT (1839-97). A French historian. He was born at Nemours and was educated at the Ecole des Chartes (1858-61). From 1861 to 1864 he was keeper of the departmental archives of Haute-Savoie and in the latter year became connected with the national archives at Paris. There he was professor of history at the Catholic Institute and in 1884 founded classes for the higher education of women. His writings, which are very numerous, are of very uneven merit: some, founded upon contemporary manuscripts, are excellent; others are works of vulgarization, evincing little scholarship and great bias. His most valuable works are *Le roi René* (1875); *La chaire française au moyen âge* (last ed., 1886); *Relations politiques de la France avec le royaume de Majorque* (1892).

LECTERN (also *lectern, lettron*, from OF. *lettrin, lettron*, *leutrin*, Fr. *lutrin*, from ML. *lectrinum, lectrum*, reading desk, from Gk. *λέκτρον, lektron*, couch). A reading desk or stand, movable or stationary, from which the Scripture lessons (*lectiones*), which form a part of the various Church services, are chanted or read.

The term is properly applied only to the class mentioned as independent of the pulpit. Such lecterns were either fixed or movable; when fixed, they were sealed to the pavement in the centre of the choir and were made of wood or metal—ordinarily brass or latten. The light, movable lecterns, usually of iron or wood, are less decorative. The lectern is of very ancient use, from the early Christian period, and it is still used by some Christian churches, especially the Catholic and Episcopal. It is made of various materials—gold, silver, bronze, brass, marble (plain or inlaid), or wood. It either has an independent base or stand, or else is part of the pulpit (q.v.), or ambone. None of the lecterns in precious metal have been preserved, but descriptions of such stands, in the *Liber Pontificalis*, show them to have been in early use and to have been flanked with candelabra. The earliest preserved are the stationary marble lecterns on pulpits in Italy, as on those of San Lorenzo and the Araceli in Rome. Richer are the lecterns on pulpits of the Pisan Tuscan school of the twelfth, thirteenth, and fourteenth centuries, especially those carved by the Pisan sculptors Nicola and Giovanni. (See PISANI.) In these examples an eagle with outspread wings supported the booklike slab, and it rested upon a composite group of the three other living creatures, symbols of the Evangelists—the Angel, the Lion, and the Bull. Usually only the eagle was carved under the book, and this became the normal type of lectern preserved to the present time. So usual was it to make the eagle the central ornament that the mediæval name for this choir lectern was ordinarily *aquila*; but sometimes the pelican was substituted (wooden lectern of fifteenth century at Zammel). This was often the case in the fifteenth and sixteenth centuries with the weakening of the old religious traditions, when other figures were substituted, such as griffins, angels, or men, contrary to true iconography. Sometimes, as in the case of the iron lectern at Tournai Cathedral, there is no figured decoration. During the Gothic and Renaissance periods the churches of central and northern Europe were decorated with beautifully carved lecterns, and even in Italy there were many inlaid with intarsia, or carved, in connection with the choir stalls, like that of Santa Maria in Organo, Verona.

LECTIONARY (ML. *lectionarium, lectionarius*, book of lessons, from Lat. *lectio*, lesson, reading, from *legere*, to read, Gk. *λέγειν, legein*, to say). In the mediæval Church, a book containing the portions of Scripture to be read in public worship. There are two lectionaries which deserve special notice. The first is the so-called "Roman lectionary," which contained the epistles and gospels of the Roman missal and sometimes all the lessons of all the various services in use in the Roman church, in which case it was named the *plenarium*. The most ancient form of the Roman lectionary was called *comes* or *liber comitis*. Its compilation was attributed to St. Jerome, and it appears certain that it belongs in substance, although not in form or in details, to his age. The collection was revised and remodeled in the eighth century. The second of the ancient lectionaries is that known as the "Gallican lectionary," which was published by Mabillon from a manuscript of the monastery of Luxeuil, and which is believed to represent the rite of the ancient Gallican church.

It is, however, imperfect, and no other copy has since been discovered.

LECTISTERNIUM (Lat., a couch spreading, from *lectus*, couch + *sternere*, to spread). A sacrificial ceremony among the ancient Romans. It had its analogue among the Greeks in festivals called *θεοξένια*, *theoxenia*; indeed, there are reasons for believing that the Romans derived the custom from the Greeks. On occasions of extraordinary solemnity figures of the greater deities were placed reclining or seated on the sacred *pulvinar*, or cushioned seat, set in the streets before the shrines, and a feast was spread on tables before them. Such a ceremony was first ordained by the Sibylline Books (see *SIBYL*) on the occasion of a pestilence in 399 B.C. Generally the gods were placed on the couches, reclining as men reclined at meals, on their left arms, in pairs, as Apollo and his mother Latona, Diana and Hercules, Mercury and Neptune. The ceremony was earlier resorted to in times of trouble, with the idea of appeasing the angry deities, but later also (and particularly) on occasions of general exultation, as a part of the *supplicatio*, or thanksgiving; the ceremonies then lasted for many days. In Imperial times it was customary to represent the female deities seated, when the ceremony was technically called *sellisternium*. The images were generally of wood, with heads of clay, wax, or marble, and were fully draped. Consult: the articles "Lectisternium" and "Theoxenia," in William Smith, *A Dictionary of Greek and Roman Antiquities* (3d ed., London, 1890-91); W. W. Fowler, *Roman Festivals* (London, 1899); Georg Wissowa, *Religion und Kultus der Römer* (2d ed., Munich, 1912).

LECYTHUS, lēs'ī-thūs. See *VASE*.

LEDA. A genus of small, elongate, concentrically striated lamellibranchs with a taxodont hinge like *Nucula*. It is chiefly notable for its longevity, for it ranges from the Silurian to recent times. It is an important shell in some of the marine Pleistocene deposits, as in the so-called Leda clays of eastern Canada. See *PELECYPODA*.

LEDA (Lat., from Gk. Λήδα). In Grecian legend, the wife of the Spartan King Tyndareus, whom Zeus visited in the disguise of a swan. She became the mother by Zeus of Pollux and Helen and by Tyndareus of Castor and Clytemnestra. In Homer only Helen is the child of Zeus (*Iliad*, iii, 426). Others made Helen the daughter of Nemesis and Zeus and merely a foster child of Leda; the egg which resulted from the union of Nemesis and Zeus, masquerading as swan, Leda found and cherished. In yet another story, alluded to by Horace, *Sermones*, ii, 1, 26, 27, Castor and Pollux, sons of Leda, were both born from one egg. Leda with the swan was a favorite theme in ancient art; the theme has been treated, too, by many modern artists. Consult C. M. Gayley, *The Classic Myths in English Literature and Art* (2d ed., Boston, 1911), and Friedrich Lübker, *Reallexikon des klassischen Altertums*, vol. ii (8th ed., Leipzig, 1914). See *CASTOR* and *POLLUX*.

LEDEBOUR, lā'de-bōōr, KARL FRIEDRICH VON (1785-1851). A German botanist, born at Stralsund. At the age of 20 he became director of the botanical garden and professor of botany at Greifswald, which positions he held until 1811, when he went to Dorpat. He remained there until 1836 and from then until his death resided mainly in Germany. His most impor-

tant writings are: *Reise durch das Altaigebirge* (2 vols., 1829-30); *Icones Plantarum Novarum Floram Rossicam* (5 vols., 1829-34); *Flora Rossica* (3 vols., 1842-51).

LEDEBUR, lā'de-bōōr, LEOPOLD, BARON (1799-1877). A German historian, born in Berlin. In the new Berlin Museum he was appointed director of the art department of the Museum for German Antiquities and of the ethnographical collection and served there until 1875. His more important books include *Das Land und Volk der Brukterer* (1827) and *Blicke auf die Litteratur des letzten Jahrzehnts zur Kenntnis Germaniens zwischen Rhein und Weser* (1837). In 1863-65 he was editor of the *Archiv für deutsche Adelsgeschichte, Genealogie, Heraldik und Sphragistik*, a journal for genealogy and heraldry.

LE DENTU, le dān'tu', AUGUSTE (1841-). A French surgeon and writer on surgical questions. Born at Basse-Terre (Guadeloupe), he was trained in the Faculty of Medicine at Paris, where he was afterward professor of clinical surgery. He was surgeon at the Hôtel Dieu, became a member of the Academy of Medicine, served as president of the surgical society, and in 1898 was president of the congress of surgery. He wrote: *Traité des maladies de la prostate et de la vessie; Affections chirurgicales des reins et des uretères* (1889); *Etudes de clinique chirurgicale* (1892); *Le cancer du sein* (1902); *Clinique chirurgicale* (1904); *Visions d'Egypte* (1911). In 1895-1901, with Pierre Delbet, he edited a *Traité de chirurgie clinique et opératoire* and in 1908-09, also with Delbet, a *Nouveau traité de chirurgie*.

LEDESMA BUITRAGO, lā-dēs'mā bwē-trā'gō, ALONSO DE (1562-1633). A Spanish poet, born at Segovia. He first became known as the author of the *Conceptos espirituales* (Madrid, 1600) and *Juegos de nochebuena* (ib., 1611). These volumes established the cult of the *conceptistas*. It was a school of impossible conceits and paradoxes, and in order to make the whole scheme mystical, a curious vocabulary became part of the system. Other works are *Romancero y monstruo imaginado* (Madrid, 1615) and *Epigramas y hieroglíficos á la vida de Cristo* . . . (ib., 1625). Quevedo was the most celebrated disciple of this school, and its influence extended to Lope de Vega. Rivadeneira's *Biblioteca de autores españoles*, vol. xxxv (Madrid, 1872), contains a selection of the works of Ledesma.

LEDOCHOWSKI, lā'dō-kōf'ské, MIECZYSLAW, COUNT (1822-1902). A Roman Catholic ecclesiastic. He was born at Gorki, near Sandomir, in Russian Poland, of an ancient Polish family, educated by the Lazarists at Warsaw and the Jesuits in Rome, and ordained priest in 1845. He soon attracted the favorable notice of Pius IX, who made him a domestic prelate and prothonotary apostolic. After filling various diplomatic posts at Madrid, Lisbon, Rio de Janeiro, Santiago, and Brussels, he was raised to the episcopate in 1861 as titular Archbishop of Thebes. On the nomination of the Prussian government he was appointed in 1866 to the metropolitan see of Posen and Gnesen, but, dissatisfied with the attitude of the government in 1870, when his request for German intervention in favor of the Pope was disregarded, he took the lead in the ultramontane opposition and did much to encourage the Polish national movement. In 1873 the determined stand which

he took against the May Laws in the Kulturkampf (q.v.) caused him to be imprisoned for two years at Astrowo. At the beginning of his captivity the government deprived him of his see; the Pope, however, made him Cardinal in 1875, and after his release he resided in Rome, formally resigning his archbishopric in 1886. From 1892 until the time of his death he occupied the important position of Prefect of the Propaganda. See MISSIONS, CHRISTIAN.

LEDOCHOWSKI, WŁODIMIR (1866-). General of the Society of Jesus. Of a Russian-Polish family, his uncle being Count Mieczysław Ledochowski, he was born in Austria and as a boy was a page of the Empress Elizabeth. He graduated from the Vienna Gymnasium and then studied at the seminary at Tarnow, Galicia, and at the Germanicum in Rome. Entering the Society of Jesus in Galicia in 1889, he became a priest in 1894, afterward, having rapidly gained a reputation as a preacher and as a writer on sociology, he was appointed by his order vice provincial for Poland and in 1902 provincial. He is thought to have been a favorite candidate for the generalship in 1906, when Father Wernz was elected; but instead he was elected assistant general over the provinces of the Netherlands, Hungary, Austria, Germany, Galicia, and Belgium. However, Father Wernz having died late in 1914, Ledochowski was chosen his successor in February of the next year.

LE'DO SAL'INA'RIOUS. See LONS-LE-SAUNIER.

LEDOUX, le-doo', ALBERT REID (1852-). An American mining engineer, born at Newport, Ky. Educated at the Columbia School of Mines (1870-73) and at the universities of Berlin (1873-75) and Göttingen (Ph.D., 1875), he served as State chemist and member of the State Board of Health of North Carolina from 1876 to 1880 and thereafter was a consulting engineer, metallurgist, assayer, and chemist. For two years he was an expert for the New York Electrical Subway Commission, and he acted as receiver of the Harney Peak Tin Mining Company. In 1903 he served as president of the American Institute of Mining Engineers. He published *Princess Anne, A Story of the Dismal Swamp* (1896).

LEDOUX, LOUIS VERNON (1880-). An American poet, born in New York, a son of Albert Reid Ledoux. He graduated in 1902 from Columbia University, then spent a year in graduate study there, and subsequently became associated with his father in the firm of Ledoux and Company, metallurgists. Much of his time, however, he devoted to literature. His poetry, whether it takes its impulse direct from nature and the life about him or puts fresh thought and feeling into classic myth and legend, is fine in texture, firm in structure, and everywhere bespeaks the exacting artistic conscience that keeps all his finished verse well above the levels of the facile and the careless. His published work includes: *Songs from the Silent Land* (1905); *The Soul's Progress and Other Poems* (1907); *Yzdra* (1909); *The Shadow of Etna* (1914).

LEDRAIN, le-drän', EUGÈNE (1844-1910). A French archaeologist, born at Sainte-Suzanne (Mayenne). He was at first a priest, but afterward devoted himself especially to the study of Oriental archaeology. He became one of the curators of the department of Oriental an-

tiquities in the Louvre and professor at the school attached to that museum. He was fond of controversies on literary or archaeological subjects. Ledrain was editor of *The Revue d'Assyriologie et d'Archéologie Orientales* and the writer of many books, including: *Un grand seigneur féodal dans la Moyen-Egypte, dix siècles avant Moïse* (1876); *L'Assyrie, l'Égypte et Israël* (1877); *Les momies gréco-égyptiennes* (1877); *La stèle du collier d'or* (1877); *Histoire d'Israël* (1879-82); *Les monuments égyptiens de la Bibliothèque Nationale* (1880-81); *La Bible, traduction nouvelle d'après les textes hébreu et grec* (1886-99); *Dictionnaire des noms propres palmyréniens* (1886); *Musée National du Louvre, Monuments araméens et himyarites* (1886); *Dictionnaire de la langue de l'ancienne Chaldée* (1897).

LEDRU-ROLLIN, le-dru'-rô'lân', ALEXANDRE AUGUSTE (1807-74). A noted French radical. He was born Feb 2, 1807, at Fontenay, near Paris, in a house which had once been Scarron's. He studied for the bar and was admitted in 1830. He was counsel for the defense in most of the prosecutions of opposition journals during the reign of Louis Philippe and obtained a great reputation as a defender of republicans. In 1841 he was elected deputy by the Department of Sarthe and became prominent in the Chamber as a member of the extreme Left. He was the editor of several of the most advanced newspapers of the day and the author of pamphlets and protests against the repression of public and individual liberties. In 1846 he published an *Appel aux travailleurs*, in which he declared his attitude towards the working classes. He was also an ardent promoter of the reform meetings that preceded the revolution of 1848, being associated with Lamartine and Louis Blanc as an orator of the workingmen, at whose political banquets he advocated the *droit au travail* (right to labor) and universal suffrage. On the outbreak of the Revolution he became one of the leaders and advocated the formation of a provisional government, and when this was carried out, he was intrusted with the portfolio of the Interior. He was afterward one of the five in whose hands the Constituent Assembly placed the interim government (May 10, 1848). In this position he showed a certain want of perception, firmness, and energy. In June, 1848, he ceased to hold office and thenceforth sought to recover his influence with the extreme democrats, which he had partly lost by accepting office. He succeeded partially and ventured on a candidature for the presidency, obtaining, however, only 370,000 votes (December, 1848). In May, 1849, he was chosen to the Legislative Assembly, but the unsuccessful protest of June 13 against Louis Napoleon's government put an end to his political career. He fled to England and became later on associated in London with Mazzini, Kossuth, and other European revolutionists in the issuing of republican manifestoes. While there he wrote and published a work against the land which had given him an asylum, *La décadence de l'Angleterre* (1850). For the next 20 years he lived alternately in London and Brussels. His name was excepted from the amnesties of 1860 and 1869, but in 1870 he was allowed to return to France. In February, 1871, he was returned to the National Assembly, but at once resigned. Later (1874) he sat as a member of the extreme Left in the Versailles

Assembly, where he made his last great oration, June 3, 1874, in favor of universal suffrage, the adoption of which in France is due to his incessant agitation. He died Dec. 31, 1874. His *Discours politiques et écrits divers* was published by his widow (2 vols., Paris, 1879).

LEDUM (Neo-Lat., from Gk. λῆδον, *lēdon*, from Ar. *lādan*, *ladanum*). A genus of plants of the family Ericaceæ, consisting of evergreen shrubs, with small, clustered, white flowers. The species are natives of the colder parts of Europe, Asia, and North America, some of them common to both continents. The leaves of *Ledum groenlandicum* are said to be used in Labrador as a substitute for tea, whence it is sometimes called Labrador tea. Sir John Franklin and his party, in the Arctic expedition of 1819-22, used *Ledum palustre* in the same way to produce a beverage with a smell resembling rhubarb. They found it refreshing. The leaves of both these shrubs possess narcotic properties and have been used as a substitute for hops in beer. They are regarded as useful in dysentery and diarrhœa, since they contain tannin. They are also used in the preparation of certain kinds of leather, as Russia leather.

LEDYARD, JOHN (1751-88). An American traveler, born at Groton, Conn. His father dying early, Ledyard was brought up by his paternal grandfather at Hartford. At first he studied law, but in 1772 entered Dartmouth to fit himself for a missionary career. Soon absenting himself, he spent several months with the Iroquois and in 1773 went as a common sailor to Gibraltar, where he enlisted in a British regiment, from which, however, he was almost immediately discharged. He returned to America, but in 1776 went to England and, as a corporal of marines, accompanied Captain Cook on his last voyage (1776-79). In 1782, while on a man-of-war off Long Island, he deserted, but in June, 1784, returned to England, where and in Paris he made fruitless efforts to organize an exploring expedition to the northwest coast of North America. He then, with the assistance of Sir Joseph Banks, undertook a tour of exploration in the extreme north of Europe. Starting from Stockholm on foot (December, 1786), he traversed the coast line of the Gulf of Bothnia and arrived at St. Petersburg early in 1787. He penetrated as far as Lake Baikal and Yakutsk, but on his return to Irkutsk he was arrested by order of the Russian government and was subsequently expelled from the country with orders not to return. He reached London with the greatest difficulty, but almost immediately—on behalf of the African Association—started on an expedition to the interior of Africa. At Cairo, however, he became ill and died (probably in November, 1788), from the effects of an overdose of vitriol. A journal which he kept during Captain Cook's voyage had been confiscated by the British government, but in 1782 he published an account from memory which became very popular. Some of his papers were also published after his death by the African Association. Consult Jared Sparks, in *American Biography*, vol. xxiv (Boston, 1828).

LEDYARD, Lewis Cass (1851-). An American lawyer and capitalist, born in Michigan and educated at Harvard University (A.B., 1872; LL.B., 1875). He established himself as a practicing attorney in New York City and subsequently became president of the Franklin

Building Company, director of many important railroads and other corporations, and trustee of the United States Trust Company and of the Atlantic Mutual Insurance Company. He served also as vice president of the New York Public Library and as president of the Lying-in Hospital. In 1914, with other directors of the New York, New Haven, and Hartford Railroad, he was indicted for conspiracy to monopolize the means of interstate transportation in New England.

LEDYARD, WILLIAM (c.1740-81). An American soldier, born at Groton, Conn. He was one of the Committee of Correspondence chosen at Groton on the closing of the port of Boston by Parliament and in 1776 was appointed by the Connecticut Assembly, of which he was a member, to be captain of an artillery company, which it was proposed to raise for the purpose of garrisoning the forts at New London. In March, 1778, he was promoted to be colonel and was appointed to command the posts at New London, Stonington, and Groton. On Sept. 6, 1781, a large British force under Benedict Arnold landed at the mouth of the Thames and advanced against New London. Ledyard was summoned to surrender, but, though he had only some 150 ill-armed militia with him in Fort Griswold, refused, hoping to be able to withstand the British until the countryside could arm. After an obstinate resistance the fort was taken by storm, and Colonel Ledyard surrendered. Major Bromfield, to whom he gave up his sword, plunged it into his breast, and then the soldiers, imitating their commander's example, murdered the greater number of their defenseless captives. Arnold in his report makes no mention of this massacre. A monument in commemoration was erected on the site of Fort Griswold. See GROTON.

LEE. A town, including the villages of South Lee and East Lee, in Berkshire Co., Mass., 11 miles by rail south of Pittsfield, on the Housatonic River and on the New York, New Haven, and Hartford Railroad (Map: Massachusetts, A 3). It is in a region noted for its beautiful scenery and popular as a summer resort. The town has a public library. There are extensive quarries of fine white marble, which has been used in the construction of many well-known buildings. Marble quarrying and the manufacture of paper are the principal industries. The government is administered by town meetings. Settled in 1760, Lee was incorporated in 1777 and was named in honor of Gen. Charles Lee (q.v.). Pop., 1900, 3596; 1910, 4106. Consult Hyde and Hyde, *Centennial History of Lee* (Lee, 1878), and *Records of the Town of Lee* (ib., 1900).

LEE (AS. *hlēo*, shelter, Icel. *hlē*, Dan. *læ*, lee). The quarter or direction towards which the wind blows and the opposite direction from *weather*, which is the point or quarter from which it blows. To get *under the lee* of an object means to have that object between you and the wind, so as to get less wind or a smoother sea. To *leeward* is towards the *lee*, away from the direction from which the wind comes. The *lee anchor* (in the case of a ship moored with two anchors) is the one by which she is not riding. A *leeboard* is a small board placed on the lee side of a small boat to keep her from drifting to leeward; it was the prototype of the centreboard so much used in shallow-built vessels.

LEE, ALFRED (1807-87). An American Protestant Episcopal bishop. He was born at Cambridge, Mass., graduated at Harvard in 1827, and, after three years' practice of the law at New London, Conn., studied for the ministry, graduating at the General Theological Seminary, New York, in 1837. He was rector of Calvary Church, Rockdale, Pa., from 1838 to 1841, when he was chosen first bishop of Delaware. In 1842 he also became rector of St. Andrew's, Wilmington. He was a member of the American Committee for the Revision of the New Testament (1881) and in 1884 succeeded Bishop Smith as presiding bishop of the Protestant Episcopal church of the United States. Lee wrote: *Life of Saint Peter* (1852); *Life of Saint John* (1854); *A Treatise on Baptism* (1854); *Memoir of Susan Allibone* (1856); *Harbinger of Christ* (1857); *Cooperative Revision of the New Testament* (1881).

LEE, ALGERNON (1873-). An American Socialist and journalist. He was born at Dubuque, Iowa, and studied at the University of Minnesota. He became an active Socialist in 1895; was a delegate to the Socialist National Convention, Chicago, in 1904 and to the International Socialist Congresses at Amsterdam in 1904 and at Stuttgart, Germany, in 1906; and served on the Socialist National Committee in 1906. He edited the *Tocsin*, Minneapolis, in 1898-99 and the *Worker*, New York, from 1899 to 1908 and became a department editor of the *Metropolitan Magazine*. In 1909 he became secretary of the Rand School of Social Science in New York City.

LEE, ANN (1736-84). The founder of the Shakers in America. She was born in Manchester, England, Feb. 29, 1736. In 1758 she became connected with Quakers, or Shakers, a sect established by seceders from the Friends who, in their meetings, exhibited fits of trembling, whence their name. At an early age she had married Abraham Stanley (or Standerlin). She was at the time a cook, he a blacksmith, and both were unable to write. In 1770 she claimed to have a revelation that strict continence was enjoined. For preaching this doctrine and other peculiarities of the Shaking Quakers' faith, such as the nearness of the Second Advent, and for her alleged visions, prophecies, and power of working miracles, she was much persecuted and several times imprisoned; but, on the other hand, so endeared herself to her coreligionists that they yielded to her leadership and called her Mother Ann. To escape persecution she came with her husband and some followers to America in 1774. In 1776, having separated herself entirely from her husband, she established at Niskayuna (now Watervliet), near Troy, N. Y., the first Shaker community. During the Revolutionary War she was imprisoned, with some of her followers, because they refused to bear arms. Released in 1781, she traveled on a missionary tour. She died at Watervliet, Sept. 8, 1784. See SHAKERS.

LEE, ARTHUR (1740-92). One of the American representatives in Europe during the Revolutionary War, youngest son of Thomas Lee and brother of Richard Henry Lee and Francis Lightfoot Lee. He was born in Stratford, Westmoreland Co., Va., Dec. 20, 1740, and was educated at home in Virginia, at Eton, and at the University of Edinburgh, where he received the degree of M.D. After travel on the Continent he returned to Virginia and began the practice

of medicine at Williamsburg. Soon, however, abandoning this, he proceeded in 1766 to London, where he continued the study of law until 1770 and successfully practiced his profession there until 1776, taking an effective share in the political pamphleteering of the time. Upon Franklin's return to America early in 1775, Lee succeeded him as the agent of Massachusetts, and late in the same year he was appointed by the Committee of Secret Correspondence of the Continental Congress as its secret agent in London. In this capacity, also, he spent much of the following year at Paris and in October, 1776, was appointed by the Continental Congress one of its commissioners to France. Early in 1777 he was sent as a commissioner of the United States to Spain, but was not received officially and accomplished little beyond securing a small loan. Upon his return from Spain he went informally, in the summer of 1777, to the courts of Austria and Prussia for the purpose of securing aid or, at least, of establishing cordial relations. Meanwhile, until the appointment of Jay, he continued to act as Commissioner to Spain, though he did not revisit that country. With Franklin and Deane he signed the treaties concluded between France and the United States in February, 1778. The importance of his services and the extent of his influence were greatly diminished by his bitter opposition to Franklin. Under rather inauspicious circumstances he returned to America in the summer of 1780 and retired temporarily to private life. In the spring of 1781 Prince William County sent him to the Virginia Legislature, by which body, at the close of the year, he was sent to the Continental Congress, where he remained until 1785. In 1784 he was one of the commissioners who negotiated the Treaty of Fort Stanwix (q.v.) with the Indians of the northern and northwestern frontiers. From 1784 to 1789 he was also a member of the Treasury Board, and he was one of the commission created in 1786 to revise the laws of Virginia. On the establishment of the new national government he retired finally to private life and died after a brief illness, Dec. 12, 1792. Consult: R. H. Lee, *Life of Arthur Lee, with his Political and Literary Correspondence* (2 vols., Boston, 1829); Francis Wharton (ed.), *Revolutionary Diplomatic Correspondence of the United States*, vol. i (Washington, 1889); C. H. Lee, *A Vindication of Arthur Lee* (Richmond, 1894). The Arthur Lee manuscripts are to be found in the library of Harvard University.

LEE, BLAIR (1857-). An American legislator and lawyer, born at Silver Spring, Montgomery Co., Md.. After graduating from Princeton in 1880 and from the law department of Columbian (now George Washington) University in 1882, he practiced his profession in Maryland and in the District of Columbia. In politics he became known as a Democrat of progressive and liberal tendencies. He was an unsuccessful candidate for Congress in 1896, served prominently as a party leader in the Maryland State Senate from 1905 to 1913, and was defeated as candidate for the gubernatorial nomination in 1911 by a vote of 64 to 65 in the convention. Supported enthusiastically by the Wilson administration, he was elected United States Senator in 1913 to fill the unexpired term of Senator Jackson (ending in 1917).

LEE, CHARLES (1731-82). A British-Ameri-

can soldier, born at Dernhall, Cheshire, England. He received a commission as lieutenant in the British army in 1751, accompanied Braddock's expedition in 1755, and in 1758 was wounded at Ticonderoga and was promoted to a captaincy. In 1762 he served with conspicuous gallantry in Portugal and received a commission from that country as a lieutenant colonel under Burgoine who had been sent by England to assist Portugal against Spain. In 1764-66 and again in 1769-70 he served in the Polish army, first as a staff officer under King Stanislas Augustus and later as a major general in the Turkish campaign. After much intriguing he became a lieutenant colonel on half pay in the British service in May, 1772, and in the fall of 1773 emigrated to America, where he used every effort to ingratiate himself with the Patriot party, whose side he took with great ostentation. Several political pamphlets which he wrote at this time became very popular. In 1775 he bought a farm in Berkeley Co., Va. In the same year he was appointed by Congress to the second major-generalship in the Continental army and became senior major general, next in rank to Washington on the resignation of Gen. Artemas Ward. In 1776 he was placed in command of the Southern Department and received most of the credit for the defense of Charleston, though he had opposed and ridiculed Moultrie's plans. In October he took command of the right wing of the American army near New York. Disregarding Washington's orders, he delayed his retreat into New Jersey for two weeks and then proceeded with great deliberation. On December 13, while at Basking Ridge, a few miles from his army at Morristown, he was captured by British dragoons and was taken to New York. Here he betrayed the American plans to the British, but in May, 1778, his treason not being suspected by Washington, he was exchanged. For his conduct at the battle of Monmouth (q.v.) he was convicted by court-martial of disobedience, misbehavior before the enemy, and disrespect to the commander in chief, and was suspended from his command for a year. Soon afterward he was wounded in a duel with Col. John Laurens, one of Washington's aids, and, on addressing an impudent letter to Congress, was dismissed from the service. He retired to his farm, and in 1782, while on a visit to Philadelphia, he died. Consult G. H. Moore, *The Treason of Charles Lee* (1858), and John Fiske, *Essays Historical and Literary* (New York, 1902).

LEE, ELIZA (BUCKMINSTER) (1792-1864). An American author, the daughter of Joseph Buckminster. She was born at Portsmouth, N. H.; was well educated by her father and brother, Joseph Stevens Buckminster; married a Thomas Lee of Boston; became a writer; and was unusually felicitous in her descriptions of New England life. She wrote, notably: *Sketches of New England Life* (1837); *Naomi, or Boston Two Hundred Years Ago* (1848); and memoirs of her father and brother (1849). She translated from the German, wrote a life of Richter (1842), and published an historical novel, *Parthenia, the Last Days of Paganism* (1858).

LEE, FRITZTGH (1835-1905). An American soldier, nephew of Robert E. Lee, and prominent as a Confederate officer during the Civil War. He was born in Clermont, Va.; graduated at West Point in 1856 and was appointed to the Second Cavalry; served against the Comanche

Indians in Texas; and was severely wounded in 1859. From May, 1860, until the outbreak of the Civil War he was instructor of cavalry at West Point. He resigned from the Federal service early in 1861, entered the Confederate army, and until September of that year was adjutant general in General Ewell's brigade. From September, 1861, he served as lieutenant colonel, and from April, 1862, as colonel of the First Virginia Cavalry in the Army of Northern Virginia. In this capacity he served in nearly all the important operations of the Army of Northern Virginia; was appointed brigadier general in July, 1862, and major general in September, 1863; was severely wounded at Winchester, Va., on Sept. 19, 1864; and from March, 1865, until his surrender to General Meade at Farmville, was in command of all the cavalry of the Army of Northern Virginia. In 1874 he delivered a patriotic address at Bunker Hill, which attracted considerable attention; in 1882-83 he made a lecturing tour through the South on behalf of the Southern Historical Society; and from 1886 to 1890 he was Governor of Virginia. He was appointed collector of internal revenue for the western district of Virginia in 1895 and in 1896 was sent to Cuba by President Cleveland as Consul General at Havana. In April, 1898, when war with Spain appeared inevitable, he was recalled, along with all the other American consuls, and in May was appointed major general of volunteers and placed in command of the Seventh Army Corps. In January, 1899, he became military governor of Havana and subsequently was placed in command of the Department of Missouri. He retired as a brigadier general, U. S. A., in 1901. He published *Robert E. Lee* (1894), in the "Great Commanders Series," and *Cuba's Struggle against Spain* (1899).

LEE, FRANCIS LIGHTFOOT (1734-97). An American patriot and one of the signers of the Declaration of Independence. He was born at Stratford, Westmoreland Co., Va., and was the fourth son of Thomas Lee and the brother of Richard Henry Lee and Arthur Lee. He was educated by private tutors and upon the death of his father inherited a considerable fortune. He established himself on his large estates on the banks of the Rappahannock and lived there the quiet, easy life of a Virginia gentleman. A sincere patriot, he was willing to risk all in the cause of the Colonies. He served for 10 years (1765-75) in the Virginia House of Burgesses and in 1775 was elected a member of the Continental Congress, in which he served until 1779, signing the Declaration of Independence in 1776 and taking part in the work of framing the Articles of Confederation. After his retirement from Congress his only participation in public affairs was a term in the Senate of his native State.

LEE, FREDERIC SCHILLER (1859-). An American physiologist. Born at Canton, N. Y., he graduated from St. Lawrence University in 1878 and from Johns Hopkins (Ph.D.) in 1885. He served as an instructor at St. Lawrence (1886-87) and as an instructor and associate at Bryn Mawr College (1887-91). At Columbia University he was a demonstrator in physiology in 1891-95, adjunct professor from 1895 to 1904, Dalton professor after 1904, and Jessup lecturer in 1911. He became an associate editor of the *American Journal of Physiology* in 1898 and of the *Columbia University Quarterly* in 1900. In

1912-14 he was president of the Harvey Society. He revised and edited Huxley's *Lessons in Elementary Physiology* (1900) and is author of *Scientific Features of Modern Medicine* (1911).

LEE, GERALD STANLEY (1861-). An American lecturer, critic, and author, born at Brockton, Mass. He graduated at Middlebury College (Vt.) in 1885, studied for three years at the Yale Divinity School, and was a Congregational minister in Minnesota, Connecticut, and Massachusetts until 1896. In 1897 he married Jennette Perry. (See LEE, JENNETTE.) He lectured on literature and the arts in modern times, contributed to magazines, edited *Mt. Tom, an All Out-Doors Magazine*, and wrote: *About an Old New England Church* (1893); *The Shadow Christ* (1896), a study of the Hebrew poets; *The Lost Art of Reading* (1902); *The Child and the Book* (1902); *The Voice of the Machines* (1906); *Inspired Millionaires* (1908); *Crowds* (1913); *Crowds, Jr.* (1914).

LEE, HARRIET (1757-1851). An English author, born in London. With her sister Sophia she secured a competence by the successful management of a private school and resided in the vicinity of Tintern Abbey and afterward at Clifton. Here she wrote, among other works, the novel *The Errors of Innocence* (5 vols, 1786) and a comedy, *The New Peerage* (1787). She is best known, however, for her *Cunlbury Tales* (5 vols, 1797-1805), which were republished in New York in 1857. In this work she was assisted by her sister Sophia, but of these tales all except two were written by Harriet. The best known is *Krutzner*, which (1821) was dramatized by Byron and published, with due acknowledgment, under the title of *Werner, or the Inheritance*.

LEE, HENRY (1756-1818). An American soldier and statesman, a member of the famous Lee family of Virginia, born at Leesylvania, one of the family estates on the Potomac. He graduated at Princeton in 1773 and soon after the outbreak of the Revolutionary War obtained a captaincy in Col. Theodorick Bland's cavalry legion. In 1777 he joined Washington just before the battle of Brandywine and from that time on for three years was employed in scouting and outpost duty, in which his restless activity earned him the nickname of Light Horse Harry. He assisted General Wayne at the capture of Stony Point and soon afterward commanded an expedition of his own which surprised and captured the British post at Paulus Hook (see JERSEY CITY) in 1779, an exploit which won for him the thanks of Congress and the commendation of Washington. In 1780, having been promoted lieutenant colonel, his legion was sent to the Southern States to aid in retrieving the disaster at Camden and, during General Greene's skillful retreat through the Carolinas, formed the rear guard of the American forces. After the tide had turned and Greene was once more advancing southward, the legion took an important part in the recovery of places held by the British and did brilliant service at Eutaw Springs (q.v.). Early in 1782 Lee resigned his commission because of ill health and retired to Virginia, where, after the conclusion of peace, he interested himself in politics. In 1786 he was elected a delegate to the Continental Congress and two years later representative of Westmoreland County in the Virginia convention which ratified the Federal Constitution. From 1789 until 1791 he was a member

of the State Legislature and from 1792 till 1795 was Governor of Virginia. While he was still an incumbent of this latter office (1794), Washington appointed him to command the 15,000 troops whose mere presence quelled the Whisky Insurrection. Five years later he entered Congress and there, after Washington's death, delivered the funeral oration which contains the familiar phrase, "First in war, first in peace, first in the hearts of his countrymen." In 1801 he retired to private life, to appear again on the stage of public affairs only for a brief moment in 1812, when, after the first disasters to the American arms in Canada, he accepted an appointment as major general. But before he could enter upon his new military duties he was wounded while aiding a friend, Alexander Contee Hanson (q.v.), editor of the *Baltimore Federal Republican*, whose property was attacked by a mob of political opponents. Lee never recovered from this injury and died while on his return from a voyage to the West Indies, taken in the hope that a change of climate might prove beneficial. He wrote *Memoirs of the War in the Southern Department of the United States* (1812), to the new edition of which (1869) is prefixed a biography by his son, Robert E. Lee (q.v.). Consult also J. T. Morse, *Memoir of Col. Henry Lee, with Selections from his Letters and Speeches* (Boston, 1905).

LEE, JAMES PRINCE (1804-69). An English bishop, born in London. He studied at St Paul's School and graduated M.A. from Trinity College, Cambridge, in 1831. He was a master at Rugby School under Dr. Arnold from 1830 to 1838, when he became head master of King Edward's School at Birmingham. Ordained in 1830, he was elected honorary canon of Worcester in 1847 and in the following year was nominated by Lord John Russell the first Bishop of the newly created see of Manchester. A great exponent of church extension, he consecrated 130 churches from 1848 to 1869. He was one of the promoters of the Manchester Free Library.

LEE, JENNETTE (BARBOUR PERRY) (1860-). An American novelist and college professor, born in Bristol, Conn. From 1890 to 1896 she was connected with the English departments of Vassar and of the College for Women of Western Reserve University. In the year last named she married Gerald Stanley Lee (q.v.) and five years later became professor of English language and literature at Smith College. Of her fiction the best example is perhaps *Uncle William* (1906), in the hero of which the reader is pleased to meet a quaint and most amiable bit of simple and kindly, yet shrewd, seaside rusticity. In 1907 appeared a work of a different stripe—*The Ibsen Secret*. Besides *Uncle William* her novels include: *Kate Weatherill* (1900); *A Pillar of Salt* (1901); *The Son of a Fiddler* (1902); *Simeon Tetlow's Shadow* (1909); *Happy Island* (1910); *Mr. Achilles* (1912); *Betty Harris* (1912); *The Taste of Apples* (1913); *The Women in the Alcove* (1914).

LEE, JESSE (1758-1816). An American Methodist Episcopal clergyman and pioneer, born in Prince George's Co., Va. A preacher after 1783, in 1789 he visited New England and established Methodism from the Connecticut River to the farthest settlement in Maine. He formed the first Methodist class in New England, at

Stratfield, Conn., Sept. 26, 1787, and the first in Boston, July 13, 1792, and for his pioneer work in New England was often called the Apostle of Methodism. He was a friend and assistant of Francis Asbury. He lacked only one vote of being elected Bishop by the General Conference of 1800. Lee was three times chosen chaplain of the national House of Representatives and once of the Senate. He wrote *A Short Account of the Life and Death of the Rev. John Lee* (1805) and a *History of Methodism in America* (1807), which has value for the early period. Consult: Minton Thrift, *Memoir of the Rev. Jesse Lee, with Extracts from his Journals* (New York, 1823); L. M. Lee, *Life and Times of Jesse Lee* (Richmond, Va., 1848); W. H. Meredith, *Jesse Lee, a Methodist Apostle* (New York, 1909).

LEE, JOHN DOYLE (1812-77). A Mormon official, born at Kaskaskia, Ill. In 1837 he came under Mormon influence and moved to Daviess Co., Mo., where he joined the Church. Afterward he returned to Illinois on mission work, and when Nauvoo became the centre of the activity of the sect, he acted as personal guard to Joseph Smith and afterward to Brigham Young. He was among the first to go to Salt Lake, and built the town of Parowan, besides locating numerous other settlements. At various times he was captain of the militia, president of Harmony, probate judge of Iron County, and member of the Territorial Legislature. He was accused of having incited the massacre of the Arkansas emigrants at Mountain Meadows (q.v.) in 1857. On his first trial before the United States Court in 1875 the jury disagreed, but on the second trial in 1876 he was found guilty. He was shot on the scene of the outrage, March 23, 1877. After his second trial he declared that he had acted under instructions from Brigham Young and other high Mormon officials. Consult *The Mormon Menace; being the Confession of John Doyle Lee, Danite, an Official Assertion of the Mormon Church under the Late Brigham Young*, with an introduction by Alfred Henry Lewis (New York, 1905).

LEE, LUTHER (1800-89). An American clergyman, born at Schoharie, N. Y. He entered the Methodist Episcopal ministry in 1827; espoused the antislavery cause (1838), incurring thereby the active opposition of the leaders of the denomination; withdrew from the Methodist church in 1843 on account of its attitude upon the slavery question; and was one of the organizers of the "Wesleyan Methodist Connection." He was president of the first Wesleyan Methodist General Conference in 1844; edited the *True Wesleyan*, the organ of the new denomination; became president of Michigan Union College at Leoni, Mich., in 1856; and in 1864 was made professor in Adrian College, Michigan. In 1867 he returned to the Methodist Episcopal church. Among his writings are: *Universalism Examined and Refuted* (1836); *Immortality of the Soul* (1849); *Slavery in the Light of the Bible* (1855); *Elements of Theology* (1856; 4th ed., 1865); *Wesleyan Manual: A Defence of the Organization of the Wesleyan Methodist Connection* (1862); *Natural Theology* (1866). Consult his *Autobiography* (New York, 1882).

LEE, NATHANIEL (c.1653-92). An English dramatic poet. He graduated at Trinity College, Cambridge, in 1668 and was then for a time an actor, but soon retired and devoted himself to

the writing of tragedies. He first attracted attention, in 1677, by his *Rival Queens*, in which occurred the well-known lines, "When Greeks join'd Greeks then was the tug of war." The work won high praise from Dryden, who was later associated with Lee in writing *The Duke of Guise* (1682). In 1684 Lee became insane, and for four years he was confined in an asylum. Upon his release he again devoted himself to literary work. Among the most popular of Lee's plays, most of which treated subjects from classical history, are *Mithridates* (1678), *Theodosius* (1680), and *Lucius Junius Brutus* (1681). Intemperance, which had driven him temporarily mad in 1684, killed him in 1692.

LEE, RICHARD HENRY (1732-94). A patriot of the American Revolution. He was born at Stratford, Westmoreland Co., Va., Jan. 20, 1732, the son of Thomas Lee, who was president of the Virginia Council and a member of the Ohio Company. After receiving some preliminary education at home the son was placed in school at Wakefield, England, where he remained until 1752, when he returned to Virginia and made his home with his elder brother. Taking an active interest in public affairs, Richard Henry Lee early became a justice of the peace for his native county and was elected to the House of Burgesses of Virginia at a time when his brother Thomas was a member of the Legislative Council. In this body he served from 1758 to 1775, taking a conspicuous stand in opposition to slavery. In 1766, when the Legislature was taking action with reference to the Declaratory Act of Parliament, he drafted the address to the King and also the memorial to the House of Lords. In 1773 he was appointed by the Legislature a member of the Virginia Committee of Correspondence and in the following year was sent to the First Continental Congress. As a member of that body, he drafted a number of important public papers, including the petition to the King, and as a member of the Second Continental Congress he prepared the address to the inhabitants of Great Britain. He contributed largely to the more difficult work of that body, being recognized throughout as one of the really influential leaders of the revolutionary movement, and finally becoming famous by his motion of June 7, 1776 (adopted July 2), that "these united Colonies are, and of right ought to be, free and independent States; that they are absolved from all allegiance to the British crown, and that all political connection between them and the State of Great Britain is, and ought to be, totally dissolved." With the decline of the prestige and power of Congress, Lee, as did other of the leading political workers, devoted more of his time to the affairs of his own State, serving in its Legislature in 1777 and from 1780 until 1784. He returned to Congress in the fall of 1784 and was then elected President of that body. In 1786 he was a member of the Virginia Legislature and in 1787 he was a member both of that body and of the national Congress. To the new Federal Constitution he was opposed, and after its adoption he was elected, by the Anti-Federalists, to the Senate, where he served until the condition of his health caused his resignation in 1792. At that time, however, he had become a supporter of Washington and of the new Constitution; but his resignation from the Senate was followed by his retirement from public life, and he died two years thereafter (June 19, 1794) at his

home, Chantilly, in his native county of Westmoreland. Lee possessed great powers as an orator. His grandson, R. H. Lee, published *Life and Correspondence of Richard Henry Lee* (2 vols., Philadelphia, 1825). His *Letters*, vols. i, ii (New York, 1910, 1914), have been edited by J. C. Ballagh.

LEE, ROBERT (1804-68). A Scottish clergyman. He was born at Tweedmouth, England, Nov. 11, 1804, educated at the University of St. Andrews, ordained a minister of the Scottish church in 1832, settled at Arbroath in 1833, and at Campsie in 1836. When the Church of Scotland was divided by the secession, he remained with the Established church, was called to the pastorate of the Old Grey Friars' Church in Edinburgh, and took a prominent part in the controversies that ensued. In 1846 he was appointed regius professor of biblical criticism in the University of Edinburgh and in 1854 published the great work of his life, *The Holy Bible, with about 60,000 Marginal References and Various Readings, revised and improved*. He was much interested in the enrichment of the Church service. In 1859 he was charged with introducing in public worship liturgical forms and postures unknown to the Church of Scotland; the fact being that he had published a volume of *Prayers for Public Worship* (1857) and used the same in his own church. He defended himself with such power and eloquence that his accusers were defeated. In 1864 he published *The Reform of the Church of Scotland in Worship, Government, and Doctrine*. He died at Torquay, England, March 14, 1868. Consult his *Life* by Story (Edinburgh, 1870).

LEE, ROBERT EDWARD (1807-70). A distinguished American soldier, commander in chief of the armies of the Confederate States of America. He was born at Stratford, Westmoreland Co., Va., Jan. 19, 1807. His father was "Light Horse Harry" Lee, a distinguished cavalry leader in the Revolutionary War; his mother, Anne Hall Carter. In 1811 his father removed to Alexandria, in Fairfax County. Very early in life he resolved on a military career, studied to that end at Alexandria Academy and under a Mr. Hallowell, entered West Point in 1825, on an appointment secured for him by Gen. Andrew Jackson, and by his diligence and ability graduated in 1829 second in his class. From this time until 1834 he was in the Engineer Corps with the rank of second lieutenant. In 1831 he married Mary Parke Custis, the great-granddaughter of Martha Washington. In 1834 he became assistant to the chief engineer of the army in Washington; three years later he superintended the construction of works to protect St. Louis from the erosion of the Mississippi, and in 1842 he took charge of the defenses in New York harbor, where he remained until the outbreak of the Mexican War, in 1846. In 1838 he had been made a captain.

In the Mexican War he was first with General Wool, for whom he did excellent scouting. Transferred at the personal request of General Scott to the army before Vera Cruz, he arranged the batteries so that the town was reduced in a week. After each of the battles of Cerro Gordo, Churubusco, and Chapultepec, he received promotion, earned by remarkable feats of physical and moral courage, and for his services in the last was brevetted colonel. He was engaged in engineering work in the city of Mexico, and at the close of the war General Scott pronounced

him "the greatest living soldier in America.*" For the next three years he was engaged in strengthening the defenses of Baltimore from an attack by sea. In 1852 Lee became superintendent at West Point and in his three years of service there improved the discipline greatly and lengthened the course of study to five years. On the formation of a new cavalry regiment in 1855, he was appointed lieutenant colonel and saw service in western Texas against the Indians. In July the command of the regiment devolved on him, but three months later he was called home by the death of his father-in-law, Mr. Custis. Returning to his command, he continued with it until the fall of 1859, when he obtained leave to visit his family. During this visit he commanded the troops which suppressed the John Brown raid. He was then called to Richmond to advise the Legislature with regard to defense, should an invasion again occur. Returning to Texas, he was in charge of his former department, until, on the secession of that State in 1861, he was recalled to Washington.

Lee was earnestly opposed to disunion, had given his own slaves their freedom, and regarded the institution of slavery as "a moral and a political evil in any country," but his future actions were clearly foreshadowed in a letter to his son: "Still, a union that can only be maintained by swords and bayonets, and in which strife and civil war are to take the place of brotherly love and kindness, has no charm for me. I shall mourn for my country and for the welfare and progress of mankind. If the Union is dissolved and the government disrupted, I shall return to my native State and share the miseries of my people and, save in defense, will draw my sword on none." While deploring the actions of his people, he believed that they had been wronged, and his sympathy drew him to them. In the last analysis, too, he was a States-rights man; for he "would defend any State if her rights were invaded." He reached home on March 1, 1861, and on April 18 Frank P. Blair, on behalf of President Lincoln, visited him and offered him the command of the Army of the United States. Lee wrote later, "I declined the offer he made me to take command of the army that was to be brought into the field, stating, as candidly and courteously as I could, that, though opposed to secession and deprecating war, I could take no part in an invasion of the Southern States." On April 19 President Lincoln declared a blockade of the Southern ports; troops began to pour into Washington; the invasion of his State had, in Lee's opinion, begun, and on April 20 he resigned, three days later taking command in Richmond of the military forces of Virginia with the rank of major general. On May 25 he became a brigadier in the service of the South, no higher rank having then been created by the Confederate government.

Lee found Virginia totally unprepared for the conflict, but acting as the commander in chief of the State troops and working steadily with General Gorgas, the chief of ordnance, he had by the end of May 30,000 men equipped and in the field and many regiments well advanced in organization. On June 8 President Davis took charge of all military movements, and General Lee, though anxious to take the field, remained at his side as an adviser.

His first operations in the field were in West Virginia during the summer and autumn of

1861 and were on the whole unsuccessful. The disadvantages he had to contend with were great, his subordinates were at loggerheads, and the enemy under General McClellan was strong and alert. Assigned to the Department of South Carolina, Georgia, and Florida, he devoted himself to the task of creating coast defenses and interior works to protect the country on which the Confederacy was absolutely dependent for supplies. His grasp of the situation was masterly, and his personal presence did much to stimulate the rapidity with which the defense was made efficient. In March, 1862, he was recalled to Richmond to direct the military operations of the Confederacy, under the supervision of President Davis, and it speaks well for the serenity of Lee's character that this somewhat trying situation produced so little friction. Men and supplies had to be prepared to meet McClellan's advance up the Peninsula, where some victory was expected from the victors of the first Bull Run to compensate for the disasters of Forts Henry and Donelson and of Roanoke Island. Lee kept in full communication with Jackson's movements in the valley of Virginia, giving him free hand. When Gen. Joseph E. Johnston, who had command in the Peninsula against McClellan, wished to draw strongly on the defensive forces of the interior and to risk all on one battle, Lee, believing that a smaller army could be successful, opposed him and was supported in this opinion by President Davis. Johnston steadily retreated before McClellan until Jackson's famous dash prevented McDowell, with his force of about 40,000, from joining the main Federal army; then he turned and fought the indecisive battle of Seven Pines (May 31, 1862). Lee took no part in this fighting, but on June 1 he took command, for Johnston had been wounded, and the next in rank, Gen. G. W. Smith, was in bad health. Setting about vigorously to secure reinforcements and sending Stuart on his brilliant circuit of the Federal army, the new commander resisted the general desire for him to fall back on Richmond and took the offensive. Some tremendous fighting at the battle of Gaines's Mill forced McClellan to retreat towards his gunboats on the James. The fierce fight of Malvern Hill, where the Confederates were unable to dislodge the Federals, allowed McClellan to reach his place of safety. The Federals had been driven back but not routed in these terrible seven days' battles around Richmond, June 25-July 1, and Lee was not satisfied with what he had done. It is possible that if he had had the right support from his subordinates he would have carried out his original plan of destroying the opposing army. General Pope soon after this took command of the Federal armies in Virginia west of Washington, while General McClellan retained position on the James River. Lee, assuming that Richmond was no longer in serious danger from McClellan's forces, planned to throw his whole available strength against Pope. A series of rapid and unexpected blows fell upon the outer armies under Pope's command, his store of provisions was captured, and on August 29 and 30, 1862, Pope's main army was signally defeated by Jackson and Lee on the same field that had witnessed the first battle of Bull Run. Lee then projected the invasion of Maryland, as well for political as for military reasons. On September 7 his entire army was near Frederick City. The invasion was a tentative one and was

attended with many disheartening circumstances. Thousands of stragglers left the ranks between Manassas and the Potomac, the greater part weakened by want of rest, food, and shoes, and worn out by continued marches and daily battles, while many yielded to other motives. General McClellan had meanwhile been sent against Lee. On Sept. 15, 1862, Harper's Ferry was captured by the Confederates under Jackson preparatory to the invasion of Pennsylvania. McClellan followed Lee's movements, keeping the body of his army between Lee and Washington. By good fortune, coming into possession of Lee's order of march, he forced the latter to turn. The battle of Antietam (q.v.), September 16-17, was the result, the advantage being with the Federals. With a greatly superior force McClellan succeeded in compelling Lee to abandon his plan of invading Pennsylvania, but the latter's superior generalship displayed throughout the whole engagement and the subsequent movements prevented the former from obtaining any further advantages as Lee retreated southward. Lee and his army had fought with splendid skill and bravery, but the campaign as a political move was a failure. The Federal government now decided to renew the attempt on Richmond, this time via Fredericksburg. On November 7 Burnside received the command of the Army of the Potomac. Both armies were rapidly drawn southward, and on November 20 Lee was gathering his entire army behind the works of Fredericksburg, while Burnside's covered the hills on the north facing them. On December 13 a determined assault was directed by Burnside squarely against the fortified hills of Fredericksburg. It was repelled with terrible loss to the Federal army. (See **FREDERICKSBURG**.) After this battle the army of General Lee was not again molested until the campaign of 1863 opened. Gen. Joseph Hooker had been appointed to supersede General Burnside and with a powerful army, about double that of Lee, now declared his intention of forcing the Confederate army from Fredericksburg. At the end of April he led the bulk of his army across the Rappahannock and took up a position near Chancellorsville. The genius of Lee was never more conspicuous than in the battle which followed (May 2-4), resulting in the complete defeat of Hooker. (See **CHANCELLORSVILLE, BATTLE OF**.) But while the battle of Chancellorsville had been brilliantly won, Lee had lost his greatest support, "Stonewall" Jackson. After some indecisive fighting the Federal army on the night of May 5 withdrew across the Rappahannock.

Lee now organized his army for the invasion of Pennsylvania, and on June 3 commenced the advance with 80,000 men. The entire Confederate army was transferred to North Virginia, and on June 27 it was concentrated near Chambersburg, Pa. Gen. George G. Meade succeeded Hooker in the command of the Federal army, which was now concentrated towards Gettysburg. General Stuart, on whom Lee depended for his information as to Federal movements, had unskillfully got on the other side of Meade and could render no service. On July 1 the battle of Gettysburg began by an unexpected collision between the Federal cavalry and the head of General Hill's column moving from Chambersburg towards Gettysburg. It resulted in the repulse of the Federal advance and its retirement to the strong position of Cemetery



ROBERT E. LEE

Ridge, south of Gettysburg. On July 2, at 4 P.M., after a tremendous cannonade, the Confederates delivered an impetuous attack on the right side of Meade's position. It met with only partial success. On the afternoon of the 3d Lee ordered a cannonade which lasted for two hours and under cover of which his attacking columns of 15,000 men formed. The attack was all that human bravery could make it; but the columns melted before the fire that waited for them, and though their van reached and covered the key of the struggle, their main force was annihilated, and the position quickly retaken. General Lee's equanimity was conspicuous in this defeat in the manner of his meeting the disorganized remnant of that returning column, infusing them with his own serene confidence and taking upon himself the responsibility for the fatal charge. Meade's army was seemingly too much shattered for him to venture the offensive the next day, although Lee stood ready for him. The Confederate general, now short of ammunition and fearing for his communications, began to retreat. (See GETTYSBURG, BATTLE OF.) Meade followed to the Potomac, but did not attack, and Lee got his army across with masterly skill. The Federal commander crossed into Virginia shortly afterward, but no events of importance took place in that State during the remainder of the year. Lee, feeling that a crisis was at hand, suggested that he be relieved by a younger man; but President Davis promptly answered that such a step was impossible. The autumn of 1863 saw only maneuvering on the part of Lee and Meade; but the latter was forced to withdraw just when he was intending to attack, and Lee went into winter quarters behind the Rapidan.

After this winter of 1863-64, in which the privations that the Confederates suffered were well compared with those of the camp at Valley Forge, the final campaign opened with General Grant in command of the Federal forces. He recognized that the way to defeat Lee was to "hammer" him out. Lee had only about 60,000 against Grant's 120,000, but he was fighting on the defensive in a very difficult country. From May 5 to June 12 there was terrible and almost continuous fighting in the "Wilderness" (q.v.), and along the line of Grant's movement to the James River, Lee using his veterans with consummate skill, and Grant his constantly filled ranks with a persistence that was peculiarly his own. In this short time the Federals lost 60,000 men and the Confederates 14,000, and in the siege of Petersburg from June, 1864, to the beginning of April, 1865, the fighting was almost as terrible, save for the fact that now the Federals were defended by their works and the Confederates were almost without food. On Feb. 6, 1865, Lee was made commander in chief of all the armies of the Confederacy. On April 2 his position with the main army became untenable, and he resolved to try to lead the 30,000 men left to him southward. He abandoned Richmond and Petersburg, which were occupied by the Federals on April 3; and Lee, pressing on to Amelia Court House, found that by some mistake his provisions had been sent on to the capital, and that he could neither fight nor retreat with any prospect of success. On April 9, 1865, he surrendered to General Grant at Appomattox Court House. The devotion of Lee's soldiers to their leader was never more strikingly shown than at the surrender.

Lee remained in Richmond until June, 1865, when he retired to a quiet country place. In October of the same year he was installed as president of Washington College at Lexington, Va., now Washington and Lee University. The five years of his service were marked by steady recuperation from the utter desolation of the war. New chairs were founded, the scheme of study was enlarged, and from the moral side it would have been impossible to secure finer results. In 1870 his health began to fail, and a visit to the farther South was tried with only temporary results. He died on the 12th of October. Lee ranks as the greatest of the Southern commanders, his humane conduct throughout the war and the magnanimous way in which he stood defeat and urged the Southern people loyally to accept the result having contributed greatly to his fame. Lee's homestead at Arlington, Va., was seized by Federal forces soon after the outbreak of the Civil War and was purchased by the national government at a tax sale in January, 1864, for \$26,800. Later in the same year the Arlington National Cemetery was established here. In 1868 George W. C. Lee, an heir under the Custis will, brought suit contesting the legality of the government's title under the tax sale, with the result that, although the suit was barred in the Supreme Court, Congress in March, 1883, appropriated \$150,000 with which, through a deed from the heir, to acquire an undisputed title.

Bibliography. J. W. Jones, *Personal Reminiscences, Anecdotes, and Letters of Gen. Robert E. Lee* (New York, 1874); A. A. Long, *Memoirs of Robert E. Lee* (ib., 1886); Fitzhugh Lee, *Robert E. Lee* (ib., 1894), in the "Great Commanders Series"; H. A. White, *Robert E. Lee* (ib., 1897); and W. P. Trent, *Robert E. Lee* (Boston, 1899); *Recollections and Letters of R. E. Lee*, by his son (New York, 1904); R. A. Brock, *Gen. Robert E. Lee* (Washington, 1904); G. M. Adam, *Life of Gen. R. E. Lee* (New York, 1905); Garrett and Halley, *The Civil War from a Southern Standpoint* (Philadelphia, 1905); H. E. Shepherd, *Life of Robert Edward Lee* (New York, 1906); J. W. Jones, *Life and Letters of Robert Edward Lee, Soldier and Man* (ib., 1906); P. A. Bruce, *Robert E. Lee* (Philadelphia, 1907); J. K. Hosmer, *The Appeal to Arms* (New York, 1907); id., *Outcome of the Civil War* (ib., 1907); T. N. Page, *Robert E. Lee, the Southerner* (ib., 1908); id., *Robert E. Lee, Man and Soldier* (ib., 1911); Gamaliel Bradford, *Lee the American* (Boston, 1912); J. J. Bowen, *The Strategy of Robert E. Lee* (New York, 1914).

LEE, SAMUEL (1783-1852). An English Orientalist. He was born at Longnor in Shropshire and graduated at Queens' College, Cambridge, in 1818. In 1819 he was chosen professor of Arabic at Cambridge; he was regius professor of Hebrew from 1831 to 1848 and at the time of his death was rector of Barley, Hertfordshire. His edition of the Syriac Bible, *Novum Testamentum Syriace* (1816) and *Vetus Testamentum Syriace* (1823), his *Grammar of the Hebrew Language* (1830), his *Book of Job, Translated from the Original Hebrew* (1837), his *Hebrew, Chaldaic, and English Lexicon* (1840), and several other works won for him a high reputation.

LEE, SAMUEL PHILIPS (1812-97). An American naval officer, born in Fairfax Co., Va. He entered the United States navy as a midship-

man in 1825. In 1862, as commander of the *Oneida*, he participated in the capture of New Orleans by Farragut and in other operations on the Mississippi. In July of the same year he was commissioned captain and was put in command of the North Atlantic blockading squadron. In May, 1864, he was in command of the vessels on the James and in the following summer was transferred to the command of the Mississippi squadron. He was commissioned commodore in 1866 and rear admiral in 1870, when he was put in command of the North Atlantic fleet. He retired in 1875.

LEE, SIR SIDNEY (1859-). An English scholar, born in London, Dec. 5, 1859. He was educated at the City of London School and at Balliol College, Oxford. In 1883 he became assistant editor of the *Dictionary of National Biography*; in 1890-91 he was joint editor and in the latter year, on the retirement of Sir Leslie Stephen (q.v.), he was appointed editor in chief. Under his supervision appeared the last 37 volumes, together with a *Supplement* (3 vols., 1901) and a *Second Supplement* (3 vols., 1912). To this great work he contributed some 800 articles, or about three volumes. He lectured at Oxford and Cambridge, in 1903 was Lowell Institute lecturer at Boston, Mass., and in 1913 was appointed professor of English language and literature in the University of London. After 1903 he was chairman of the executive of the Shakespeare's Birthplace Trust. In 1911 he was knighted. He is most favorably known for *Stratford-on-Avon from the Earliest Times to the Death of Shakespeare* (1885; new ed., 1906); a particularly important *Life of Shakespeare* (1898; abridged for students, 1900); *A Life of Queen Victoria* (1902; new ed., 1904); *Facsimile Reprint of Shakespeare's First Folio* (1902); *Shakespeare First Folio Facsimile, with Introduction and Census of Extant Copies* (1902); *Elizabethan Sonnets* (1904); *Great Englishmen of the Sixteenth Century* (1904); *Shakespeare's Poems and Pericles* (1905); *Shakespeare and the Modern Stage* (1906); *The French Renaissance in England* (1910). He also edited Lord Berners' translation of *Huon of Bordeaux* (1883-85) and the *Autobiography* of Lord Herbert of Cherbury, with a continuation of his life (1886; new ed., 1906). The memoir of Edward VII, which was not highly eulogistic, and which appeared in 1912 in the *Dictionary of National Biography*, was the storm centre of a heated controversy.

LEE, SOPHIA (1750-1824). An English novelist and dramatist, born in London. She was the daughter of John Lee, the actor, who was well known as a theatrical manager and a player of Shakespearean rôles. Her first success, a five-act comedy, entitled *The Chapter of Accidents*, was played and published in 1780. The profits of the venture enabled her to establish a girls' school in Bath, which was speedily successful through her abilities as a teacher and the charm of her companionship, and which she continued to conduct until 1803. In 1785 she published *The Recess, or a Tale of Other Times*, which is among the first specimens of historical fiction in English, and in 1796 her tragedy *Almeyda, Queen of Grenada*, was played with Mrs. Siddons and Charles Kemble in the cast, but proved a failure. Her best-known work was done in collaboration with her sister Harriet Lee (q.v.), to whose *Canterbury Tales* she contributed two stories entitled *The Young*

Lady's Tale and *The Clergyman's Tale*. Her other works include: *The Hermit's Tale* (1787); *The Life of a Lover* (1804); *The Assignment* (1807).

LEE, STEPHEN DILL (1833-1908). An American Confederate soldier. He was born at Charleston, S. C., and graduated from the United States Military Academy in 1854. He then served in the Fourth Artillery, but resigned in 1861, and became a captain in the Confederate army. He distinguished himself at the siege of Vicksburg, was made a prisoner, was exchanged, and then was promoted to major general. At the close of the war he had risen to the rank of lieutenant general. Afterward he was a planter in Mississippi and a State Senator in 1870; was president of the Mississippi Agricultural and Mechanical College in 1880-99; and served as superintendent of the Vicksburg National Military Park after 1899 and as president of the United Confederate Veteran Association after 1904.

LEE, THOMAS GEORGE (1860-). An American anatomist, born at Jacksonville, N. Y. He graduated B.S. and M.D. from the University of Pennsylvania in 1886 and studied also at Würzburg (1887), Harvard (1892), and Munich (1892). At Yale he lectured on histology and embryology (1886-91); at Radcliffe College, Harvard, was assistant in histology (1891-92); and at the University of Minnesota was professor of histology and embryology and director of the laboratory (1892-1909), professor of anatomy and director of the Institute of Anatomy (1909-13), and thereafter professor of comparative anatomy. He became associate editor of the *Anatomical Record* and is author of monographs on the embryology of vertebrates.

LEE, VERNON. The nom de plume of the English writer Violet Paget.

LEE, WILLIAM (?-c.1610). An English stocking weaver, born probably in Calverton, Nottinghamshire. He was educated at Oxford, took orders, and afterward had a living at Calverton. In this town he invented his stocking frame and started a small manufactory. There was some interest taken in the invention by Queen Elizabeth and James I, but they were too conservative to consider it seriously, and Lee, having received much encouragement from Henry IV, went to France and set up his frames at Rouen. Here he worked with great success. After his death, which occurred soon after the assassination of Henry IV, Lee's workmen returned to England and brought the valuable invention back with them.

LEE, WILLIAM (1737-95). One of the representatives of the United States in Europe during the American Revolution; the fifth son of Thomas Lee and the brother of Richard Henry Lee, Francis Lightfoot Lee, and Arthur Lee. He was born at Stratford, Va., but some time before the Revolutionary War took up his residence as a merchant in London, where he acted as the agent of the Colony of Virginia for a time and in 1773 was elected sheriff of Middlesex. He was an ardent partisan of Wilkes and in 1775 was elected on the Wilkes ticket alderman of London, which position he held nominally until January, 1780. In June, 1777, he joined Thomas Morris in superintending the mercantile affairs of the United States at Nantes and for a time had virtually entire charge of the commercial interests of the United States in France. On May 9, 1778, he was appointed by Congress

a commissioner to the courts of Vienna and Berlin, but remained in Paris for nearly a year after receiving his commission, and subsequently lived at Frankfort, Germany, but accomplished nothing. In September, 1778, he drew up, with Jan Neufville, an Amsterdam merchant, a commercial treaty which was indorsed by the burgo-master of Amsterdam, and which later served as a pretext for England's declaration of war against Holland in 1780. In June, 1779, Lee was recalled from his missions, both of which had been unsuccessful. He died at Green Spring, Va., having returned to his native State about 1784. Lee's diplomatic correspondence, together with a brief biographical sketch, may be found in Wharton (ed.), *The Revolutionary Diplomatic Correspondence of the United States* (Washington, 1889). *The Letters of William Lee* (Brooklyn, 1891) have been edited by W. C. Ford.

LEE, WILLIAM LITTLE (1821-57). An American lawyer. He was born at Sandy Hill, N. Y., studied at Norwich University, Vt., and, after being superintendent of a military academy at Portsmouth, Va., also at the Harvard Law School. His practice in Troy, N. Y., was interrupted by threatening consumption, and in 1846 he started for Oregon by sea, but was delayed at Honolulu; undertook several suits for the government and was made Hawaiian Chief Justice and Chancellor. He drew up a new constitution and civil and criminal codes, and was appointed president of the commission which was to have charge of the land given up to the common people by the King and chiefs—a measure proposed by him. In 1855 he went to the United States and negotiated a reciprocity treaty between that country and Hawaii.

LEECH (AS. *læce*, leech, physician, Goth. *lēkes*, OHG. *lāhhī*, *lāchi*, physician, from AS. *læc*, medicine, gift). An annelid of the order or class Hirudinea, divided into a number of groups, Hirudinidae, etc., some of which contain many species. They are mostly inhabitants of fresh waters, although some live in grass, etc., in moist places, and some are marine. They are most common in warm climates. The body is soft and composed of segments (e.g., *Pontobdella*) like that of the earthworm, but not furnished with bristles, except in one genus, to aid in progression as in the earthworm; instead of which a sucking disk at each extremity enables the leech to avail itself of its power of elongating and shortening its body, by means of which it moves with considerable rapidity. The external rings (annuli) which show in the body wall do not correspond to the inner segments, but are much more numerous. While there are usually 33 segments, the number of rings may be more than 200. There are, at the middle of the body, 3, 5, 6, or 12 rings to each segment. The mouth is in the anterior sucking disk. The mouth of many of the species is admirably adapted not only for killing and eating the minute aquatic animals which constitute their ordinary food, but for making little wounds in the higher animals, through which blood may be sucked. The mouth of the medicinal leech has three small, white, hard pharyngeal teeth, minutely serrated along the edges, and curved so as to form little semicircular saws, provided with muscles powerful enough to work them with great effect and to produce a triradiate wound, i.e., three short, deep gashes, radiating from a common centre, whence some of the rather fanciful names, such

as dragon leech. The stomach is very large and is divided into compartments, some of which have large lateral cæca; and a leech which has once gorged itself with blood retains a store for a very long time, little changed, in these receptacles, while the digestive process goes slowly on. The circulatory system consists of four great pulsating trunks—one dorsal, one ventral, and two lateral—with their branches; there is no heart. The blood system is in such close and intimate relation with the body cavity that it is difficult to determine accurately the limits of each. The aëration of the blood takes place in the skin, or rarely by special outgrowths of the body walls, which function as gills. Leeches are oviparous, and each individual is hermaphroditic, while in certain allied forms (*Histiobdella*, etc.) the sexes are distinct. The eggs are laid in sacs, or, as in *Olepsine*, the fish leech, are covered with a transparent fluid substance which hardens and envelops the eggs. Development is usually direct, and there is no metamorphosis, the young being like the adult. When feeding, the leeches pair and one impregnates the other by passing spermatophores through the penis into the vagina. Simultaneous mutual fertilization has also been described. They have small eyes (in the medicinal leech 10), which appear as black spots on the dorsal side of the segments back of the mouth. These eyes are very simple and seem to be merely modified sense papillæ, of which there are many arranged in longitudinal rows, the whole length of the body. Leeches vary much in size and color. Some species are less than half an inch long, while *Macrobdella valdriana* is said to reach a length of 2½ feet. Some are very slender, while others are broad and very flat. The colors are usually dull gray, brown, dark green, and black.

Leeches frequently change their skin; and one cause of the great mortality so often experienced among leeches kept for medicinal use is the want of aquatic plants in the vessels containing them, among which to rub themselves for aid in this process, and for getting quit of the slime which their skins exude. Leech aquaria in which aquatic plants grow are therefore much more favorable for the health of leeches than the tanks and vessels formerly in use. The medicinal leech (*Hirudo medicinalis*) is a European species, a rare native of Great Britain; leeches, however, are generally imported from Hamburg and from the south of Europe. The ancients were well acquainted with leeches, but their medicinal use seems to have originated in the Middle Ages. The horseleech (*Hæmopsis sanguisorba*) is common in Great Britain, it is much larger than the medicinal species, but its teeth are comparatively blunt, and it is little of a bloodsucker, and useless for medicinal purposes. In many parts of India, as in the warm valleys of the Himalaya, the moist grass swarms with leeches, some of them very small, but very troublesome to cattle and men who have occasion to walk through the grass. The moist valleys of Java, Sumatra, Chile, and other tropical countries swarm with land leeches. Many species of leech are found in the United States, the most common ones belonging to the genera *Nophelis* and *Glossiphonia* (better known as *Clepsine*). Consult: A. E. Verrill, *Invertebrate Animals of Vineyard Sound* (Washington, 1874); J. P. Moore, "The Leeches of the United States National Museum," in *Proceedings of the United States National Museum*, vol. xxi (Washington, 1899); W. E. Castle,

"Some Fresh-Water Rhynchobdellidæ and their Parasites," in *Museum of Comparative Zoölogy, Bulletin*, vol. xxxvi (Cambridge, Mass., 1900), containing a bibliography; F. E. Beddard, "Earthworms and Leeches," in *Cambridge Natural History*, vol. ii (Cambridge, Eng., 1901); F. E. Beddard, *Earthworms and their Allies* (New York, 1912).

LEECH, JOHN (1817-64). An English caricaturist. He was born in London, Aug. 29, 1817, and was educated at the Charterhouse, where he formed his lifelong friendship with Thackeray. At the wish of his father he studied medicine at St. Bartholomew's, where he was most distinguished for his anatomical drawings, a talent which he turned to account on the collapse of his father's fortune. In art he was practically self-taught. His first work, "Etchings and Sketches by A. Pen, Esq." (1835), was a series of street characters, drawn on stone. After this appeared his sketches in Bell's *Life in London*. After designing for various magazines and executing several series of plates in collaboration with Percival Leigh, including an important lithographic series entitled "The Children of the Nobility," he became associated with *Punch* (1841). His satirical and political sketches for *Punch*, upon which his fame chiefly rests, were separately published under the title "Pictures of Life and Character" (1854-69). Among the works which he illustrated were Dickens's *Christmas Stories* (1843-48), Gilbert A'Beckett's *Comic History of England* (1847-48), and its companion piece, *Comic History of Rome* (1852), and R. C. Surtree's sporting novels. In 1858 he made a tour through Ireland, the outcome of which was a book, *Little Tour in Ireland*, written by his traveling companion, Dr. Hole, which he illustrated. He also designed illustrations for the *Illustrated London News*, *Punch's Pocket Book*, and *Once a Week*. He died at Kensington (London), Oct. 29, 1864.

Leech represents the transition from Cruikshank to Du Maurier, when humorous art was progressing from the coarse and boisterous satire of earlier times to the more refined forms of the present day. The work of Leech was less versatile and dexterous but more refined than that of Cruikshank, although he had as keen an eye for the ridiculous, and his caricatures were truer to life. Consult Chesneau, "Un humoriste anglais," in the *Gazette des Beaux-Arts* (1875); Brown, *John Leech* (London, 1882); W. P. Frith, *John Leech and his Work* (2 vols., ib., 1891); *Catalogue of an Exhibition of Works by John Leech, 1817-1864, Held at the Grolier Club* (New York, 1914).

LEECHBURG. A borough in Armstrong Co., Pa., 35 miles northeast of Pittsburgh, on the Pennsylvania Railroad (Map: Pennsylvania, B 6). There are extensive steel sheet works, foundries, cement plants, and productive coal mines. Pop., 1900, 2459; 1910, 3624.

LEECHÉE. See LITCHI.

LEECHING (AS. *læce*, leech, physician, Goth. *lēkeis*, OHG. *lähhi*, *lāchi*, physician, from AS. *læc*, medicine; the worm is so called from its medicinal use). The application of leeches for the purpose of abstracting blood. This method of bloodletting is employed in medicine in place of cupping or venesection in the case of local inflammation or acute congestion. Having attached itself to the integument by means of teeth and suction apparatus, the leech secretes a liquid which prevents the blood from coagu-

lating; and hence the persistent bleeding in some cases after a leech is removed. A leech is most easily applied by inserting its tail end first in a small, narrow bottle, and then inverting the bottle against the skin and letting the leech slide down. If it refuses to bite, a few drops of sweetened milk or of blood put on the skin will overcome its reluctance and incite it to attach itself. The leech may be detached by sprinkling salt on it. At each application a leech ordinarily takes about one drachm of blood. It may be made to disgorge by treating it with salt or by stripping it gently from tail to head. Leech bites leave deep and permanent though small scars. Leeches are employed in cases of meningitis, in conjunctivitis, in purulent inflammation of the external ear, and in the treatment of swollen joints, such as occur after a traumatism. They are especially useful in deep inflammations of the eye and ear, parts not easily accessible to the knife. The troublesome bleeding which follows in some cases is treated with styptics or with pressure of a gauze compress over the wound. Leeches should not be applied where the skin is delicate or loose, e.g., such as that over the eyelids or scrotum.

The use of leeches is not cleanly nor aseptic, and occasionally infection follows. Hence many prefer to employ the "artificial leech," which consists of a tube provided with a piston for exhausting the air within it. A scarificator having first been used, the margin of the end of the tube is anointed and placed firmly against the skin, and the air exhausted. Blood passes out into the tube. An excellent form of artificial leech is that devised by Dench, of New York.

LEECH LAKE. A lake in Cass Co., north central Minnesota (Map: Minnesota, C 3). It is nearly 25 miles long, about 15 miles broad, has an area of 184 square miles, and lies at an elevation of 1333 feet. The United States government has built a dam at its outlet, which drains into the Mississippi. It is one of a group of four considerable lakes (Pine, Sandy, and Pokegama being the other three) which form an important reservoir system for the headwaters of that river. The surrounding country is well timbered and constitutes the Leech Lake Indian Reservation.

LEEDS. A city and a county borough in the West Riding of Yorkshire, England, 22 miles west-southwest of York and 185 miles north-northwest of London (Map: England, E 3). It is situated in the valley of the river Aire nearly in the centre of the riding. Leeds is the largest city in Yorkshire, after Sheffield, and the sixth in England. It lies in an important coal and iron district; to the east and north the country is agricultural, to the west and south industrial. The river Aire, which has been open for navigation since 1659, flows into the Humber and affords communication with the sea on the east; to the west water communication is afforded by the Leeds and Liverpool Canal (127 miles long), finished in 1816. The railway facilities are exceptionally fine. The city is irregularly laid out. The numerous handsome public buildings are principally on the north side of the Aire. The notable buildings include the church of St. Peter's, a noble edifice, rebuilt in 1840; and St. John's, New Briggate, consecrated by Archbishop Neale in 1634, an almost unique example of a "Laudian" church still retaining the original fittings. The fine town hall (1853-58) is in Grecian style, 250 feet long and 200 broad,

with a tower 225 feet high. Its great hall, 161 feet long, 72 feet wide, and 75 feet high, is richly decorated and contains one of the largest and most powerful organs in Europe. There is a colossal statue of Queen Victoria in the vestibule, and one of Wellington in the front of the building. The Royal Exchange is in the Perpendicular style. Kirkstall Abbey, about 3 miles from Leeds, was founded between 1147 and 1153 by Henry de Lacie for the Cistercian Order of monks. It is a fine old ruin, remarkable for its simple grandeur and unity of design. It was bought by Colonel North and presented to the borough in 1888. Adel Church, about 4 miles from Leeds, is an interesting building, erected in 1140. Near it was a Roman station where antiquities have been found. There are many charitable institutions, among which are the Harrison almshouses, the fever and smallpox hospitals of the municipality, an excellent infirmary, etc. Leeds University has several fine buildings, with well-equipped departments of chemistry, engineering, biology, arts, and technical training, as well as a medical department, located near the Leeds Infirmary. (See LEEDS, UNIVERSITY OF.) The public recreation grounds, owned by the corporation, are Woodhouse Moor (the principal one), Hunslet Moor, Ivy House Estate, East End Park, and Armley Park. Roundhay Park, one of the most beautiful demesnes in England, at a distance of about 2 miles from Leeds, was bought by the corporation of the town in 1872 for \$140,000 and converted into a recreation ground for the use of the public. The city is divided into 16 wards and is governed by a mayor, 16 aldermen, and 48 councillors. The municipality owns fish, cattle, fruit, and corn markets, gas and water works, an electric-lighting plant, tramways, baths, free libraries, and cemeteries; subsidizes institutions for technical education; and maintains a fire brigade, an effective police force, and bands of music for the summer season. It provides garden lots for artisans and other people of small means, and has modern sewage works for converting the refuse into fertilizers.

For centuries Leeds has been the great centre of British woolen manufacture. Among the staple manufactures are fine broadcloths, army clothing, and fancy cloths sent from neighboring towns to be finished in Leeds. There are also manufactures of felt carpeting and drugget. Leeds has an enormous leather trade, and the manufacture of boots and shoes is a very important industry. The iron industry includes the smelting of ore, founding, and the manufacture of machinery, engines, agricultural implements, etc. There are extensive manufactures of fine decorative earthenware, leather, ready-made clothing, chemicals, silks, glass, railway cars, tobacco, paper, fire brick, etc.

Probably named after a British chief, Lede or Leod, in Saxon times Leeds was an important centre and is mentioned by Bede. Its charters, the first dating from 1208, were granted in the reigns of kings John, Charles I, Charles II, and James II. It was made a city in 1893 and sends five members to Parliament. At her jubilee in 1897 Queen Victoria created the chief magistrate Lord Mayor. Pop., 1801, 53,200; 1891, 367,505; 1901, 428,968; 1911, 445,568. The area of the city at the 1911 census was 21,593 acres. Consult: R. Thoresby, *Ducatus Leodiensis* (Leeds, 1816); Whitaker, *Loidis and Elmete* (ib., 1816); Jackson, *Guide to Leeds* (ib., 1889); Kidson,

Historical Notices of the Leeds Potteries (ib., 1892); Arthur Tait, *Some of the Public Institutions of Leeds* (ib., 1903); and Publications of the Thoresby Society.

LEEDS, DUKE OF. See DANBY, THOMAS OSBORNE, EARL OF.

LEEDS, UNIVERSITY OF. Founded in 1874, it constituted a part of Victoria University (Manchester) from 1887 to 1904, under the title of Yorkshire College. In 1904 it was reorganized as an independent university. It consists of four faculties—arts, science, technology, and medicine—and confers degrees also in law. The university practically stands alone in England in the provision of agricultural courses and in sending lecturers and dairying instructors to local centres. The institution, in addition to the usual sources of revenue, receives grants from the city and county councils in the ridings of Yorkshire and an annual subsidy from the Clothworkers' Company, London, which has equipped buildings for courses in dyeing, textiles, and tinctorial chemistry, and the Skinners' Company for similar work in the leather industries. The enrollment in 1912-13 was 1320. In 1911 Prof. Michael E. Sadler (q.v.) was appointed vice chancellor of the university. See MANCHESTER, UNIVERSITY OF.

LEEDS MUSICAL FESTIVAL. One of the important musical festivals of England, held every three years. Their chief object is the production of choral and orchestral novelties, principally by native composers, though foreigners are by no means excluded. The first of these festivals was held in 1858 in celebration of the opening of the town hall by Queen Victoria. The great artistic and financial success of the undertaking led to a movement for the establishment of a triennial festival, but it was not until 1877 that the plan was actually carried out. Since then the concerts have taken place regularly. From 1880 to 1898 Sir Arthur Sullivan was the conductor, and many important works were brought out. Since 1901 Sir C. Villiers Stanford has been the conductor.

LEE-HAMILTON, EUGENE (1845-1907). An English poet, born in London. He was educated in France, Germany, and at Oxford, entered diplomatic service, took part in the Alabama arbitration at Geneva, and was Secretary of the Legation at Lisbon. His health failing, he retired to Italy, where he lived with his half sister, Violet Paget (q.v.). Among his volumes are: *Poems and Transcripts* (1878); *Imaginary Sonnets* (1888); *The Fountain of Youth: A Fantastic Tragedy in Five Acts* (1891); *Sonnets of the Wingless Hours* (1894); *Forest Notes* (1899); a translation of Dante's *Inferno* (1898); *The Lord of the Dark Red Star* (1903).

LEEK. A manufacturing and market town in Staffordshire, England, 24 miles northeast of Stafford (Map: England, D 3). The parish church dates from 1180, but has suffered from its restorers. The churchyard, at the summer solstice, affords a view of a curious phenomenon, the sun appearing to set twice on the same day behind Cloud Hill to the west of the town. The town contains numerous educational and benevolent institutions. It has manufactures of silk goods, especially silk thread, and agricultural implements. It owns the gas and water works, markets, cemetery, and public baths and maintains an isolation hospital, public library, and technical school. The town charter was granted

by King John in 1208. Pop., 1901, 14,406; 1911, 15,487.

LEEK (AS. *leac*, OHG. *louh*, Ger. *Lauch*; possibly connected with OIr. *luas*, plant), *Allium porrum*. A biennial plant of the family Liliaceae, a native of the south of Europe. It is closely related to the onion, but instead of a bulb has a slight thickening at the base of the stem which may reach a height of 3 feet. The leaves are about an inch wide and a foot or more long, the flowers are in a large and dense terminal globular umbel, which is not bulbiferous. The leek has been long in cultivation, and some of the varieties exhibit the effects of cultivation in greatly increased size and delicacy. The lower part of the stem, before it has run up into a flower stalk, blanched by earthing up or other means which also induce it to swell and extend, is much esteemed in Europe for culinary purposes, but in America has not become widely popular. Its flavor is much milder than that of the onion. It is generally sown in spring and is used during the following winter. It flourishes in a rich but light and dry soil. Gardeners often transplant seedling leeks instead of merely thinning out the original rows. In general the culture of leeks is similar to that of the onion. See HOUSELEEK and Plate of ONIONS, OYSTER PLANT, ETC.

LEEMPOELS, lām'pools, JEF (1867-). A Belgian figure and portrait painter. He was born in Brussels and studied at the academy there under Portaels and Stallaert. His strikingly original work, although bold in technique, is minutely finished, with luminous color effects. All his pictures have an idealistic meaning, sometimes expressed by portraits of commonplace people, as in his "Friendship"; sometimes veiled in mysterious symbolism, as in "Destiny and Humanity." The latter painting, a reflection on the littleness of man, excited much controversy and earned for Leempoels the title of "a painter of hands." It was exhibited at Paris, Berlin, Antwerp, Vienna, Munich, and at St. Louis (1904), where it was awarded a gold medal. Among his other paintings are: "Angel or Demon"; "A Cruel Vision"; "Les Eplorés" (Those who Weep); "At Church"; "Dominique"; the decorative diptych, "Each in his Wisdom would Raise Aloft his Folly"; "Men Going to Work." His portraits, which are truthful and realistic to a marked degree, include the likeness of himself and his family, known as "Hymn to a Family"; King Leopold of Belgium (1904, Senate House, Brussels); Duchess d'Arenberg; Monsieur Schollaert, president of the Belgian Chamber; and a number of portraits of representative Americans, painted during a visit to New York. Leempoels received the great state medal at Vienna in 1895 and gold medals at Antwerp, Paris, and Buenos Aires (1910). He was made Chevalier of the Legion of Honor and Chevalier of the Order of Leopold.

LEER, lār. A town of East Friesland, in the Province of Hanover, Prussia, 50 miles west-northwest of Oldenburg, on the right bank of the Leda, near its junction with the Ems (Map: Germany, B 2). It manufactures machinery, cigars, tobacco, strawboard, creosoted block, soap, dye goods, lumber, and cabinetwork, and also has breweries, distilleries, iron foundries, and shipbuilding yards. A new harbor was completed in 1903, and the town carries on an extensive foreign trade in grain, groceries, animal

and dairy products, and in its own manufactures. The schools include a Gymnasium and a navigation school. Pop., 1900, 12,302; 1910, 12,690. Leer is believed to be one of the oldest towns of the province, although it obtained municipal rights only in 1823.

LEES, CHARLES HERBERT (1864-). An English physicist. Born in Glodwick, Oldham, he was educated at Owens College, Manchester, and at the University of Strassburg. He was demonstrator and then lecturer in physics at the University of Manchester and afterward professor of physics in the University of London. In 1910-13 he served as president of the London Physical Society. He wrote on the conductivity of heat (in crystals, metals, etc.), on explosives, and on electricity, and published school textbooks on practical physics.

LEES, JAMES CAMERON (1834-1913). A Scottish clergyman, born in London. He was educated at Glasgow and Aberdeen universities and, licensed to preach in 1855, was minister at Carnoch, Ross, in 1856-59 and of the abbey of Paisley in 1859-77. Becoming widely popular as a preacher, he was called to the pulpit of St. Giles's, Edinburgh, in 1877; there he remained until 1909. He served as chaplain in ordinary in Scotland to Queen Victoria from 1881 to 1901 and thereafter to the King. His writings include: *Tobersnorey* (1878); *History of the Abbey of Paisley* (1878); *Stronbury* (1881); *History of St. Giles's, Edinburgh* (1889); *Life and Conduct* (1893); *History of the County of Inverness* (1897).

LEETE, FREDERICK DELAND (1866-). An American Methodist Episcopal bishop, born at Avon Springs, N. Y. He graduated from Syracuse University in 1889, later studied there and at the University of Rochester, and entered the ministry in 1888. From 1891 to 1894 he was general secretary of the Young Men's Christian Association of Utica, N. Y. After a series of pastorates in large churches in Utica, Rochester, Syracuse, and Detroit, he was elected Bishop by the General Conference of 1912 and assigned to residence in Atlanta, Ga. He is the author of *Everyday Evangelism* (New York, 1909) and *Christian Brotherhoods* (ib., 1912).

LEETE, WILLIAM (c.1603-83). A Colonial Governor of Connecticut. He was born in England, where he studied law and served for a time in the Bishop's Court at Cambridge. He turned Puritan, emigrated to America in 1637, settled in the New Haven Colony in 1639, and was one of the founders of Guilford and a pillar of the church there. He served as Deputy Governor of New Haven from 1658 to 1661 and then as Governor until the Colony was united with Connecticut under the royal charter of 1662. He is said to have harbored the regicides Goffe and Whalley, and he certainly evaded the demands of the royal emissaries for their arrest. He was Deputy Governor of the united Colony from 1669 to 1676 and was then Governor until his death.

LEETO'NIA. A village in Columbiana Co., Ohio, 56 miles (direct) southeast of Cleveland, on the Youngstown and Ohio River, the Pennsylvania Company and the Erie railroads (Map: Ohio, J 4). There are large blast furnaces and machine shops manufacturing iron, bandsaws, planing machines, and miners' tools. Coal and natural gas are found in the vicinity. The water works are owned by the village. Pop., 1900, 2744; 1910, 2665.

LEEWARDEN, la'wår-den. A town of the Netherlands, capital of the Province of Friesland, in a rich and extensive plain, on the Harlingen and Gröningen Canal, 16 miles east-northeast of Harlingen (Map: Netherlands, D 1). Numerous canals intersect the town, and walks have been laid out on the site of the former fortifications. Leeuwarden has a handsome town hall and an ancient palace of the Stadholder of Friesland. There are several learned societies, among them the Frisian Society for the study of history, antiquities, and language, which possesses an interesting museum. The town has several libraries. The Gothic chancery of the sixteenth century was formerly the seat of the law court for Friesland and now contains the national archives and a provincial library. One of the curiosities of the town is the Oldehove, a massive but unfinished church tower, built of brick and dating from 1529. The industries include the manufacture of gold and silver ware, musical instruments, and mirrors. The town is a large fruit and beef market, the largest in Holland next to Rotterdam, and trades in flax, chicory, woolen goods, groceries, wines, and brandy. Pop., 1900, 32,162, 1912, 37,897. Leeuwarden was a walled town as early as 1190 and till the end of the thirteenth century was a port on a bay called the Borndiep, which the drifting sand gradually filled up.

LEEUWENHOEK, lä'wen-huk, ANTONY VAN (1632-1723). A Dutch naturalist, born at Delft. He did not receive a learned education, but was a man of means who devoted himself, for his own amusement, to the manufacture of lenses and to the investigation of microscopic forms of life, without, however, following any scientific plan of procedure. He discovered and identified the red corpuscles of the blood, described striated muscle fibres, and in 1686 demonstrated the circulation of the blood in the capillaries. He was also the first to find *Hydra*, Infusoria, and rotifers, many species of which he described. Leeuwenhoek studied the anatomy of many insects, observed the parthenogenetic reproduction of aphides, and disproved many cases of supposed spontaneous generation among animals. Whether he or Ludwig Hamm was the first to see living spermatozoa is a matter of dispute, the observations having been made at about the same time, in 1677. Most of Leeuwenhoek's writings were in the form of letters, published in London in the *Philosophical Transactions* of the Royal Society and in the *Mémoires* of the Paris Academy. One hundred and twelve of these letters appeared in the *Philosophical Transactions*. They were later published in a collected form under the Dutch title *Sendbrissen ontledingen en ontdekkingen, ondervindigen en beschouwingen* (7 vols., 1685-1718), and in Latin, *Opera Omnia, sive Arcana Naturæ Ope Exactissimorum Microscopiorum Selecta* (7 vols., 1715-22). An abridged English translation was published in London by Samuel Hoole in 1800. See BACTERIA.

LEEUWIN, loo'in, CAPE. The southwest extremity of Australia, marked by a first-class lighthouse, visible at 21 miles (Map: Australia, W., B 12). It was first sighted, in 1622, from the *Leeuwin* (Lioness), a Dutch vessel.

LEEWARD (loo'ard) ISLANDS. A part of the West India group (Map: West Indies, G 3). The name has four distinct applications: geographically it is sometimes used in reference to the Greater Antilles and adjacent islands, some-

times to the islands off the Venezuelan coast west of Trinidad (these were the Leeward Islands of the Spaniards), and sometimes to the islands lying between the Virgin group and Martinique (in the first two cases the name was used to denote islands not directly exposed to the trade winds); politically the name is applied to a British colony erected in 1871 and consisting of Antigua, Montserrat, St. Christopher and Nevis, a part of the Virgin group, Dominica, and their dependencies. The area of the colony is about 705 square miles. Pop., 1901, 127,434; 1912, 127,784, of whom about 95 per cent were negroes and colored persons. See articles on the islands named above.

LEEWAY. When a ship is steering in any direction and a strong wind is blowing, so as to make an angle with the direction of the ship, the ship's actual course is the resultant of two forces, one represented by her headway (or locomotive power), the other by the force urging her in the direction of the wind. This resultant must be somewhat between the two, and, with the same power of wind, the angle between the direction in which the ship is steering and the resultant will be great or small as the headway is diminished or increased. This angle represents the leeway, and the distance lost to leeward is shown by the side of the triangle subtending this angle. In computing the course, allowance must be made for leeway.

LEFANU, le-fá-nóo', JOSEPH SHERIDAN (1814-73). An Irish novelist and journalist, born in Dublin. He was educated at Trinity College, Dublin; joined the staff of the *Dublin University Magazine* (1837) and was its editor and proprietor from 1839 till 1872; purchased three Dublin papers and united them in the *Evening Mail* (1839); and wrote some 12 Irish novels, sensational, but fine in their way, the best of these being, perhaps, *Uncle Silas* (1864). In poetry he is notable for his weird and romantic touch, and he has written some stirring ballads. His *Purcell Papers*, a series of Irish stories, were edited with a memoir by A. P. Graves (London, 1880); and his *Poems* were for the first time collected and edited (ib., 1896), with an introduction, also by A. P. Graves.

LEFEBURE-WÉLY, le-fá'bur'-vā'lé', LOUIS JAMES ALFRED (1817-69). A French organist and composer, born in Paris. When only 15 years old, he succeeded his father as organist at Saint-Roch. In 1832 he entered the Conservatory and in 1834 won two second and the next year two first prizes. He further studied composition, counterpoint, and the organ with Halévy, Berton, Adam, and Séjan. From 1847 to 1858 he was organist at the Madeleine and, from 1863 to his death, at Saint-Sulpice. In 1850 he received the decoration of the Legion of Honor. As an organist, he was especially famous for his wonderful improvisation. His piano compositions were popular, but his organ pieces, "Cantiques," and "Offertoires" are superior. He also wrote an opéra comique, *Les recruteurs* (1861), symphonies for orchestra, chamber music, and masses.

LEFEBVRE, le-fév'r', CHARLES (1843-). A French composer. He studied at the Conservatory, where he won the Grand Prix de Rome and where he afterward taught. He composed *Judith*, a lyric drama in three acts (1879); *Melka* (1883); *Le trésor*, based on Coppée (1884); *Eloa*, a lyric poem based on De Vigny (1889); *Zaire*, from Voltaire (1887);

Sainte Océile (1896); *La messe du fantôme* (1899); *Toggenburg*, from Schiller (1906). He composed a number of symphonies, among which are *Symphonie en ré* and *Dalila*; sonatas; instrumental music; etc.

LEFEBVRE, le-fèvr', FRANÇOIS JOSEPH, DUKE OF DANZIG (1755-1820). A marshal of France. He was born at Ruffach in Alsace, entered the army at 18 and was a sergeant in the French Guards when the Revolution broke out. He rose rapidly in rank. Hoche in 1793 made him brigadier general and the next year general of division. He fought at Fleurus and along the Rhine from 1794 to 1797. In the latter year he was commander in chief of all the French armies for a few months after the death of Hoche. He took part with Bonaparte in the coup d'état of 1799 and in 1804 was made a marshal of the Empire. He distinguished himself in the war against Prussia in 1806-07. He conducted the siege of Danzig and after its capture was created Duke of Danzig (1808). He won fresh laurels in the campaign in Spain in the same year, especially by his capture of Bilbao and Segovia. In 1809 he was present at Eckmühl and Wagram and put down the insurrection in the Tirol. During the Russian campaign he had the command of the Imperial Guard and in 1814 fought valiantly against the allies in France. Submitting to the Bourbons after Napoleon's abdication, he was made a peer. During the Hundred Days he again joined Napoleon and was not pardoned by the Bourbons until 1819.

LEFEBVRE, JULES JOSEPH (1836-1912). A French historical and portrait painter. He was born at Tourman (Seine-et-Marne), studied with Léon Cogniet, and won the Prix de Rome in 1861. His drawing is correct, and his knowledge of form is complete, but he lacks power, his treatment is smooth, and he represents the academic tendencies of his day. Lefebvre was long a professor at the Ecole des Beaux-Arts and is chiefly important as an excellent and sympathetic teacher who numbered many Americans among his 1500 or more pupils. His paintings are usually single figures of beautiful women. He created a great sensation with his "Reclining Woman" (1868) and with the allegory of "Truth" (1870), a nude woman holding aloft a mirror, probably the best known of his works, and now in the Luxembourg. His other works include the "Grasshopper" (1872, St. Louis Museum); "Mignon" and "Graziella" (1878), both in the Metropolitan Museum, New York; "Slave Carrying Fruit" (1874, Ghent Museum); "Yvonne" (1876, Luxembourg); "Diana Surprised" (1879, Ecole des Beaux-Arts); "La Fiammetta" (1881), from Boccaccio; "Psyche" (1883); "Lady Godiva" (1890); "A Daughter of Eve" (1892). Among his best portraits were those of M. L. Raynaud and the Prince Imperial (1874). Among his many decorations were a first-class medal at the Paris Exhibition of 1878 and the medal of honor in 1886. He was a Commander of the Legion of Honor and a member of the Institute.

LEFEBVRE-DESNOUETTES, le-fèvr'-dâ'-no'et', CHARLES, COUNT (1773-1822). A French general, born in Paris. He entered the French army, serving in four different armies during the Revolution, and afterward as aid-de-camp to Napoleon at Marengo. He distinguished himself at Austerlitz, was made brigadier, and in 1808 general of division. He conducted the siege of Danzig, from which he got his title. At the siege

of Saragossa he was taken prisoner by the English, but escaped from England and took part in the Austrian, Russian, and Prussian campaigns, and fought in France against the allies in 1814. He was made a peer by Napoleon in 1815 and was at Fleurus and Waterloo. Condemned to death by the Bourbons, he escaped to the United States and attempted to establish a colony of French refugees in Alabama. Despondent and homesick, he obtained permission to return to France, but was drowned off the coast of Ireland on his way home.

LEFEBVRE, G. J. SHAW. See SHAW-LEFEBVRE, GEORGE JOHN.

LEFÈVRE, le-fèvr', **FAVRE**, fâ'vr', or **FABER**, fâ'bâr', PIERRE (1506-46). One of the six coadjutors of Loyola in the establishment of the Order of Jesuits. He was born at Villaret in Savoy. He came of a peasant family and went to study at the College of Sainte-Barbe in Paris (1527), where he became Loyola's tutor and closest friend. With five others he laid the foundations of the order at Montmartre, Aug. 15, 1534. Lefèvre received the appointment of professor of theology in the Collegio di Sapienza in Rome in 1537 and the next year was sent to Parma on a special mission for the reformation of the diocese. He visited Germany in 1541, when he became a member of the Assembly of Regensburg, and again in 1544, when he founded the Jesuit College at Cologne. He established the Jesuit colleges at Coimbra, Madrid, Valladolid, and Valencia. He died in 1546, on his way to join the Council of Trent. After his death he was canonized. Lefèvre was a man of great earnestness, learning, and eloquence, kindly in nature and pure in life.

LEFÈVRE D'ESTAPLES, dâ'tâ'pl', JACQUES. See FABER, JACQUES LEFÈVRE D'ESTAPLES.

LEFFERTS, MARSHALL (1821-76). An American engineer, born at Bedford, Long Island. He was early a clerk, a civil engineer, and in business. For 11 years (1849-60) he was associated with various telegraph companies. He patented an automatic system of telegraphic transmission and became electrical engineer of the American Telegraph Company and consulting engineer of the Atlantic Cable Company, for which he made valuable inventions. In 1861 he went to the defense of Washington in command of the Seventh Regiment, New York State Militia, was called out again in 1862 and in 1863, and was on duty in New York City during the draft riots of July, 1863. In 1867 he resigned his office with the Western Union (formerly the American) Telegraph Company and acquired an interest in its commercial news department. Two years later he became president of the Gold and Stock Telegraph Company and in 1871 took control of the commercial news department after its purchase by this company.

LEFFLER, M. G. MITTAG. See MITTAG-LEFFLER, MAGNUS GÖSTA.

LEFKOSIA, lèf'kô-zè'a. See NICOSIA.

LE FLÔ, le flô, ADOLPHE CHARLES EMMANUEL (1804-87). A French general and politician. He was born at Lesneven, was educated at the military school of Saint-Cyr, and, having joined the army (1825), took part in the Algerian campaign of 1831. In 1848 he was promoted to be brigadier general. In the same year he was sent as Ambassador to Russia, whence he returned in 1849 and became a member of the National Assembly. At first an adherent of Louis Napoleon,

Le Flô finally opposed his designs and was among those whom the coup d'état of 1851 drove into exile. Returning to France in 1857, he lived in retirement until after the fall of Napoleon. During the German War of 1870-71 he was for a short time Minister of War and at its close was appointed by Thiers to fill the same office. He soon resigned and was Ambassador to Russia from 1871 to 1879. A monument to him was erected at Lesneven in 1899.

LEFORT, le-fôr', FRANÇOIS (1653 or 1656-99). A Russian admiral and statesman, born and educated at Geneva. After serving for some time in the French and Dutch navies, he entered the Russian army and distinguished himself against the Turks and Tatars. He took an active part in the intrigues which made Peter the Great the sole ruler of Russia (1687-89). Peter never forgot Lefort, who became his favorite and devoted servant and, next to the Czar, the most important personage in Russia. He was a man of great acuteness and ability and, with Patrick Gordon, became a great force for Occidental civilization in Russia. He remodeled the Russian army and laid the foundation of the Russian navy. In 1694 he was made grand admiral and generalissimo. When Peter the Great visited foreign countries in 1697 Lefort was the chief of the embassy, in the train of which the Czar traveled incognito. Consult Blum, *Franz Lefort* (Heidelberg, 1867).

LEFRANC, le-frân', ABEL (1863-). A French critic, born in Oise. He was three times a laureate of the French Academy, became president of the Société des Etudes Rabelaisiennes, and served as a professor at the Collège de France. He gained a position of authority on sixteenth-century literature. In 1910 he visited America and lectured at Harvard, and in 1913 he was exchange professor at the University of Chicago. He wrote *Histoire de la ville de Noyon et de ses institutions jusqu'à la fin du XIIIe siècle* (1887); *La jeunesse de Calvin* (1888); *Les dernières poésies de Marguerite de Navarre* (1896); *Etudes sur le platonisme en France à l'époque de la Renaissance* (1896-1901); *Les idées de Marguerite de Navarre* (1898); *Publications des œuvres inédites d'André Chénier* (1899-1903); numerous studies in the *Revue des Etudes Rabelaisiennes* (1903-09); *Le tiers livre de Pantagruel et la querelle des femmes* (1904); *Leçons sur Molière et sur le roman français au XVIIe siècle* (1904-09); *Les navigations de Pantagruel* (1905); *Défense de Pascal: Pascal est-il un faussaire?* (1906); *Etudes sur Maurice Guérin et sur ses œuvres inédites* (1908); critical edition of *Jean Calvin* (1911); *Les œuvres de François Rabelais* (1912-13).

LEFUEL, le-fwèl', HECTOR MARTIN (1810-81). A French architect, born at Versailles. He received instruction from his father and Huyot before he entered the Ecole des Beaux-Arts. The Prix de Rome, which he won in 1839, enabled him to study the great monuments of classical architecture. His first important commission was the Salle de Spectacle in the palace of Fontainebleau (1853), but his principal work was on the new buildings of the Louvre and Tuileries as successor to Visconti upon his death in 1853. The new façade of the Grande Galerie, the remodeling of the pavilions Marsan and De Flore, and the new façade on the Rue de Rivoli were his work. He also built the national porcelain factories at Sèvres. He was elected a member of the Institute in 1855.

LEG (from Oícel. *leggr*, leg, Dan. *læg*, Swed. *låg*, calf of the leg). That part of the lower extremity which lies between the knee and the ankle. It consists of two bones, the tibia and fibula (see **SKELETON**; **FOOT**), and of masses of muscles (together with nerves and vessels) which are held in their position by coverings of fascia and are enveloped in the general integument.

The shaft of the tibia is of a triangular prismoid form and presents three surfaces and three borders. The internal surface is smooth, convex, and broader above than below; except at its upper third, it lies directly under the skin and may be readily traced by the hand. The external and the posterior surfaces are covered by numerous muscles. The muscular mass forming the calf (formed by the gastrocnemius, soleus, and plantaris muscles) is peculiar to man and is directly connected with his erect attitude and his ordinary mode of progression. The anterior border of the tibia, the most prominent of the three, is popularly known as the shin and may be traced down to the inner ankle. The fibula, or small bone of the leg, lies on the outer surface of the tibia and articulates with its upper and lower extremities and with the astragalus inferiorly. It affords attachment to many of the muscles of this region. The region is nourished by the anterior and posterior tibial arteries, into which the popliteal artery separates. Both these arteries occasionally require to be tied by the surgeon in cases of wounds or aneurism. The blood is returned towards the heart by two sets of veins—the deep, which accompany the arteries, and the superficial, which are known as the internal or long saphenous and the external or short saphenous veins. These superficial veins are very liable to become permanently dilated or varicose (a condition the nature and treatment of which are considered in the article **VARICOSE VEINS**) if there is any impediment to the free transmission of the blood, or even from the mere weight of the ascending column of blood, in persons whose occupation requires continuous standing. The nerves of the leg, both sensory and motor, are derived from the great sciatic nerve and from its terminal branches, the internal popliteal and the external popliteal or peroneal nerve. In cases of fracture or broken leg the two bones are more frequently broken together than singly, and the most common situation is at the lower third. The tibia is more liable to fracture than the fibula, in consequence of its sustaining the whole weight of the body, while the fibula has nothing to support.

Bandy Leg, or Bowleg. This is a condition in which the curve of the tibia is increased, and the leg is bowed with the concavity inward. It is due to allowing a child to walk too early, or to rickets (q.v.), or rarely to muscular contraction before the child is put on his feet. The condition may be remedied in many cases by appropriate orthopedic appliances or by means of a surgical operation, in which the outer condyle of the femur is cut off in a slanting line, and the limb allowed to fall into its new position. Or the shaft of the bone may be broken, the leg straightened, and bandaged in proper position until healing is complete.

See **KNOCK-KNEE**, also cut in article **ACHILLES TENDON**.

LEGACY (OF. *legacie*, from Lat. *legatum*, bequest, from *legare*, to bequeath, send on a com-

mission, from *law*, law). A gift of a chattel, a sum of money, or other personal property made by the will of a deceased person. The term is synonymous with bequest. Devise (q.v.) is the corresponding term in case of gifts by will of real estate.

Legacies may be either specific or general. A specific legacy is a bequest of a specific thing, as a particular horse, picture, piece of silver, or other article. A general legacy is a bequest payable out of the general assets of the estate of the deceased person. It may be a gift of money or it may be of property without in any manner separating or distinguishing it from other property of like kind belonging to the testator. The important difference between the two kinds of legacies is that, if the subject matter of the specific legacy fail, i.e., if the picture be destroyed or disposed of by the testator during his lifetime, or if the horse die, the legacy lapses, and the legatee takes nothing under his bequest. In the case of general legacies, as the legacy is not to be paid by or out of any particular property, the legacy does not lapse so long as there are any assets of the estate applicable to the payment of legacies. When, however, there are not sufficient assets in the estate (after paying the testator's debts, which must first be paid) to pay legacies, the specific legacies must be paid in preference to general legacies, which must abate, i.e., be reduced *pro rata*. The order of abatement may, however, be fixed by the terms of the will.

A third class of legacies, which partakes of the character of both specific and general legacies, consists of what are known as demonstrative legacies. A demonstrative legacy is one which the testator directs to be given out of specific money or property or its proceeds, as, e.g., a gift of a certain number of stocks and bonds out of a larger number, or of a chattel to be purchased out of the proceeds of a certain portion of the testator's estate. The demonstrative legacy is like a specific legacy in that it is given out of a specific fund, and in that it does not abate with general legacies, but it is like a general legacy in that it does not generally abate with the loss of the particular fund or property out of which it is to be paid. It is generally provided by statute that legacies shall not be payable until the expiration of one year after the testator's death, from which date interest is payable on the legacy if there are funds and it is not otherwise provided by the will.

If the legatee dies before the testator, the legacy in general lapses and will pass to the residuary legatee, i.e., the one to whom the will gives all personal property not otherwise disposed of. If there is no residuary clause in the will, lapsed legacies pass, under the statutes of distribution in force in the various jurisdictions, to the next of kin of the testator. In a few States it is provided by statute that legacies to a child of the testator, in case of the child's death before the death of the testator, shall go to the child's issue. Legacies may also in effect lapse by ademption, i.e., some act of the testator during his lifetime by which he pays or satisfies the legacy in advance of his death. (See ADEMPMENT.) In general any legal person may be a legatee. Legacies to a married woman, however, upon payment, vest in her husband at common law, and a legacy to an infant is payable to his guardian for the infant's benefit. In many

States there are various statutes limiting the power of a testator to make bequests to corporations and to aliens, so that bequests to corporations, and also for charitable uses not authorized by the statute, are void. (See USES AND TRUSTS.) Formerly a bequest to the witness of a will rendered the will void. Now, under most statutes of wills the will is valid, but the bequest is void. In some States bequests to the testator's illegitimate children are void. In general such bequests are valid, but the word "children," when used in a will, will be deemed to mean legitimate children, if there are such, to the exclusion of illegitimate. The more important rules as to the construction of clauses giving bequests are discussed under WILL. See also ADMINISTRATION. Consult the authorities referred to under WILL.

LEGACY DUTY. See DEATH DUTIES.

LEGAL CAPACITY. See CAPACITY, LEGAL.

LEGAL EDUCATION. On the Continent of Europe before 1088. In the time of the Roman Republic it was customary for a prospective lawyer to begin at the age of 16 to listen systematically to the advice given to clients by some learned juriconsult, and the student also had to familiarize himself with the Twelve Tables. It was thus that Cicero learned law under the two Scævolas. In the time of Augustus the study of the Twelve Tables was superseded by the study of the Prætorian Edict. About the same time certain juriconsults began to devote themselves principally to giving instruction. Among the earliest and most famous of these teachers were Labeo and Sabinus, today best remembered for their connection with the two sects of lawyers, the Proculians and the Sabinians. From about the beginning of the third century there were systematic law schools, especially at Rome and at Constantinople. The course in the law schools covered four years, and students were supposed to complete it at the age of 20. Before 533 the texts studied were the Institutes of Gaius, the same author's treatises on married women's property, guardianship, wills, and legacies, the Prætorian Edict, Papinian, Paulus, and the Constitutions. By a constitution of 533 the course of study was rearranged, and the old texts gave place to Justinian's Institutes, Digest, and Code. The framing of the *Corpus Juris Civilis*, indeed, was partly guided by the needs of students and was largely executed by the professors of Constantinople and Berytus.

In the East the study of the *Corpus Juris Civilis* was superseded by Greek paraphrases and then by new treatises. In Italy, however, the study of the *Corpus Juris Civilis* was never wholly abandoned. It is not known to what extent there was systematic study of law in the Dark Ages, but in the eleventh century Pavia and Ravenna were centres of law teaching, the former being preëminent in Lombard law and the latter in Roman law.

On the Continent of Europe since 1088. The year 1088 has become recognized rather arbitrarily as the beginning of European university instruction. It is taken as the year of the founding of the University of Bologna, because it marks, as nearly as practicable, the commencement of the teaching of law by Irnerius. By the middle of the twelfth century the appearance of Gratian's Decretum made possible a systematic study of the canon law. Academic degrees appeared in the thirteenth century. Early

in the fifteenth century the bachelor's degree was awarded by the universities to students of both the canon and civil law, four and five years' study respectively being required; and higher degrees for additional years of study. The teaching was by lectures which elucidated the text, developed a systematic view of the subject, and solved hypothetical problems. Soon after the time of Irnerius the study of the civil and the canon law spread to the universities that gradually arose in all parts of Europe.

Throughout the continent of Europe the universities are to-day the only route to the legal profession. The requirement for admission to the course in law is a general education substantially equivalent to that acquired by two or three years of residence as an undergraduate of an American college. The course in law covers not less than three nor more than four years. From country to country there are some differences in details. In Germany, e.g., admission to the bar is secured exclusively through a government examination, for which, however, university work equivalent to the requirements for a degree affords the only possible preparation; and the examination must be succeeded by practical work for three years, in which time the candidate passes successively from administrative duties to assisting a judge of one of the lower courts and then to helping a practicing lawyer with the daily tasks of a law office; and for persons hoping to become administrative or judicial officers these three years of practical work are followed by a second government examination. In France, on the other hand, the degrees are a baccalaureate in two years, a licentiate in three years, and a doctorate in four years; and the licentiate degree admits to the bar as an *avocat*, whereas two years of study under the law faculty suffice, without a degree either in general knowledge or in law, to admit the candidate to the grade of an *avoué*. Finally, in Germany, but not in France, almost all legal instruction is given by persons who have never been engaged in practice.

In England. The study of the *Corpus Juris Civilis* and of the *Corpus Juris Canonici* seems to have entered the universities of Oxford and Cambridge as soon as they were founded. The civil law continues to be taught in the English universities. The canon law ceased to be taught after the Reformation. The common law found little recognition in the universities until recently; and, indeed, even to-day the universities can hardly be said to be making a serious attempt to become places for the professional study of law. The famous lectures on the common law delivered at Oxford by Blackstone, beginning in 1753, were addressed to audiences largely composed of undergraduates, and kept in mind to a considerable extent the needs of persons who, without intending to enter the profession, wished to learn the general features of the political and legal system of their country. Both Oxford and Cambridge have a considerable number of teachers of civil law and of common law; but the instruction gives less prominence to common law than to civil law and to such comparatively non-professional topics as constitutional law, international law, and analytical jurisprudence; and the courses are taken chiefly by undergraduates as part of their preparation for the degree of bachelor of arts. There is provision, both by instruction and by appropriate degrees, for law study by graduates in arts who expect to become

lawyers, but these law degrees, of which fewer than 20 are annually conferred in each university, are taken chiefly by persons who have pursued the requisite studies in London. Indeed, the Inns of Court, which alone have the power to call to the bar, continue to be substantially the only centres for a barrister's education. These four Inns—the Inner Temple, the Middle Temple, Lincoln's Inn, and Gray's Inn—have been for about six centuries the learned societies to which every barrister belongs, and their historic associations, even independently of the conservatism of the profession, render it very difficult for legal education to become domiciled elsewhere. About the middle of the fifteenth century there were 10 Inns of Chancery, besides the four Inns of Court, and it was common for students to begin with the former and to complete their education at the latter. The total residence requisite for admission to the bar was apparently eight years. This time, however, was not wholly devoted to law, for other accomplishments, including singing and dancing, were pursued by the students, and, indeed, it seems to have been common for persons who did not contemplate entering the profession to go to the Inns, rather than to the universities, for the final embellishments of education. In those days, during the four terms of court, all barristers were resident in the Inns, and thus the students had excellent means of preparation for the profession. There were systematic lectures, called readings, by barristers, and at public moot courts and private boltings and even at meals the students discussed actual and hypothetical cases. In the sixteenth century students are known to have made great use of the *Natura Brevium*, the Old Tenures, and Littleton's Tenures; and the readings and mootings and boltings continued. After the middle of the seventeenth century Coke's Institutes became the chief textbook; and about the same time the old machinery of teaching began to be disused. In addition to the means of study already indicated, it is known that students made collections of notes from the Year Books and other reports of cases and that they spent much time in copying pleadings. From the middle of the eighteenth century the student, while keeping his terms at his Inn, began his studies by copying pleadings in the office of a special pleader and passed thence to the office of a barrister in general practice, paying to these instructors such substantial fees as procured adequate guidance in study. This remains the common mode of preparation for the bar in England. The student, after passing a preliminary entrance examination in grammar, composition, Latin, and the history of England—from which entrance examination he is exempt if a graduate of one of the universities—enrolls himself in one of the Inns. He next keeps 12 terms by eating six dinners at the Inn each term—though members of the universities need eat only three dinners each term. Meanwhile he has probably been passing six months in the office of a solicitor in good conveyancing practice and a year or two in the office of a barrister with a good chamber practice, and thus he has learned, among other things, to frame statements of cases to be submitted by a solicitor to a barrister, to give opinions upon such cases, and to frame pleadings. Simultaneously he attends court and does the reading necessary for the examinations for call to the bar. These examinations include Roman

law and constitutional law; but they are devoted principally to the ordinary heads of English law and equity. In the absence of extraordinary circumstances admission cannot occur until three years after entering the Inn. The examinations are conducted by the Council of Legal Education, which is appointed by the Inns. The Council maintains lectures by readers and assistant readers, but these lectures are not largely attended, and, though established half a century ago, have not yet made much impression upon the system of legal education.

The solicitors are under regulation by the Incorporated Law Society, which maintains lectures and examinations similar to those of the Council of Legal Education. The Incorporated Law Society, however, is the older body, and lectures and examinations for solicitors considerably antedate lectures and examinations for barristers.

In the United States. In America, as elsewhere, legal education was once obtained exclusively in lawyers' offices. Professorships entitled professorships of law, but devoted, it would seem, to presenting popular and not technical views of law to undergraduate college students and to the general public, were founded rather early, e.g., at William and Mary College in 1779, at the College of Philadelphia in 1790, at Columbia College in 1794, and at Harvard College in 1815. The professorship at Philadelphia resulted in a course of lectures by Justice James Wilson in 1790-91. The professorship at Columbia was twice held by Chancellor Kent, first from 1793 to 1795, and secondly from 1823 to 1826; and the work of Kent's second holding of the professorship was of a technical nature and produced the *Commentaries on American Law*. The Harvard professorship, called the Royall, was first held by Isaac Parker.

The earliest classroom instruction in technical law was furnished not at the colleges named, but in the famous private law school founded at Litchfield, Conn., by Tapping Reeve and maintained until 1833. This institution, though unincorporated, was thoroughly organized, having a course of 14 months, pursuing the lecture system, . . . examinations and moot courts, and . . . in some years as many as 50 students from all parts of the United States. Thus, in the case of Litchfield it is clear that there was a law school, whereas in some other cases it is difficult to say whether there was a law school or simply an ordinary law office paying extraordinary attention to law students. The Harvard Law School dates from 1817, when there were two professors and when students who had completed their general education began to come to Harvard for professional instruction; but the Harvard Law School was not conspicuous until 1829, when Justice Story became Dane professor of law. There was a private law school in 1821 at Needham, Va.; and that, though it lasted but a short time, it was carefully managed as indicated by Taylor's *Journal of the Law School*. There was a private law school at Northampton, Mass., in 1823; and this school ceased in 1829, when one of its instructors became Royall professor at Harvard. The Yale Law School dates from 1824, being apparently an outgrowth of a private school. There was a private law school at Winchester, Va., in 1826, and during its short existence it produced Tucker's *Commentaries on the Laws of Virginia*. The law school of the University of Virginia

was opened in 1826. The Cincinnati Law School was opened in 1833.

There has been a steady growth of law schools in number and in attendance; and in recent years this growth has been so emphatic as to prove that the law schools are now recognized as the only places for obtaining adequate preparation. In 1890-91 there were 54 law schools, with 406 instructors and 5252 students. In 1913-14 there were 114 law schools, with approximately 1200 professors and special and assistant instructors, and 15,000 students, including about 200 women. The numerical advances during this period were accompanied by other changes, most of them unquestionably changes for the better.

The requirements for admission have been increased so that now one-half of the schools require at least a high-school education, and several require a college degree or its educational equivalent. The law-school course has been lengthened, on the average, about one year, so that now 80 out of 114 schools offer a course of three years. There has been a tendency to change the method of study from the lecture and textbook systems to the case system, which was introduced at Harvard by Professor Langdell in 1870, and which gained a foothold at the Albany Law School in 1889, and at the State University of Iowa and Columbia University in 1890.

There is difference of opinion as to the merits of the three systems of legal teaching—or, better, of legal study. Under the lecture system the student first derives his knowledge at the lecture and from the lecturer; and the student very probably takes notes and ultimately answers questions as to his understanding of the instruction given. Under the textbook system the student primarily derives his knowledge at his own room and from the statements made by text writers; and he goes to the lecture room to be questioned on his recollection and understanding of the statements in the textbooks, and to receive more light from the instructor. Under the case system the student primarily derives his knowledge of law at his own room and through his own analysis of select reported cases, and after extracting from these cases the propositions of law necessarily involved in the decisions—the *rationes decidendi*—he goes to the lecture room to state and discuss these cases and to participate in the solution of hypothetical problems based upon them. Under each system there may be statements of law by the instructor, reading textbooks, study of reported cases, and discussion of problems; but, notwithstanding the possibility that each system may be so treated as to seem like one of the others, and notwithstanding the personal peculiarities which cause each instructor to pursue to some extent a method of his own, the distinction between the several systems is in practice readily drawn, and each law school is commonly known, according to the system to which it is principally devoted, as a lecture school, a textbook school, or a case school, although some of them attempt to combine systems and thus are rather difficult of classification.

There were, in 1913-14, 114 law schools in the United States, including the law departments of universities. Forty-five of these schools have joined the Association of American Law Schools, the purpose of which is the consideration and discussion of the problems of legal education, especially the improvement of law schools. One-

half of this number may properly be classed as case schools; and some of the others combine the study of cases with the use of standard textbooks. Membership in this association is now restricted to schools requiring a three-year course. Of the other schools not in this association, the majority adhere to the textbook system, and a few to the strict lecture system; but in many the study of leading cases in addition to the regular work is encouraged. There are 30 evening schools, 10 with separate evening and day courses, and the remainder have day sessions exclusively, although many give all lectures either before or after the usual hours of legal business, so as to afford students the opportunity of gaining experience in law offices at the same time. The academic year averages between 30 and 40 weeks. Eighty schools have a three-year course, and the remainder two years, with the exception of two which offer only a one-year term. In a number of schools there are opportunities for a four-year course. Harvard and Pennsylvania now require a degree in arts or in science, or the equivalent of a full college course, as a preliminary qualification for admission. Columbia, Yale, and California require three years' college work; Chicago, Minnesota, Missouri, Wisconsin, and Leland Stanford Junior require two years; and 15 schools require one. About one-half of the remaining schools require a preliminary education equivalent to a high-school course, about one-fourth something less than this, and the remainder make no conditions of this character.

There are now approximately 15,000 law students, of whom about 3000 hold college degrees, and approximately 4000 took the degree of LL.B. at the close of the academic year 1913-14. The value of the grounds and buildings of the law schools in the United States is estimated at \$2,500,000, and the endowment funds at \$1,500,000; and there are over 500,000 volumes in their libraries. A number of the schools maintain legal periodicals of value to the profession.

Closely connected with improvements in law schools is a recent advance in requirements for admission to the bar. The American Bar Association has made systematic efforts to raise the standard of admission to the bar in all States. Prior to 1880 the examination of candidates for admission was conducted exclusively by judges of the various courts, and consisted entirely of oral questions. There was, therefore, no uniformity in such examinations. In most States the candidates who received a diploma from a recognized law school were admitted without further examination. No fixed period of study was prescribed. At present half of the States require certain preliminary education; 35 States have State boards of law examiners; 40 States have uniform examinations; the examinations are conducted in writing in 40 States; 25 States require three years' study of the law before taking the examination for the bar. Examinations often include, in addition to definitions and classifications that have been substantially memorized, the solution of hypothetical problems resembling those which will arise in the actual prosecution of trial cases.

Legal education is a frequent subject of discussion at meetings of law societies. The American Bar Association has a standing committee on legal education and admission to the bar, and also a section of legal education. In 1901 the Association of American Law Schools was

founded, holding meetings at the same time and place as the American Bar Association.

Law Libraries in the United States. According to a report of the Committee of the American Association of Law Libraries, printed in the *Law Library Journal*, October, 1912, there were then in the United States and Canada 639 law libraries, containing 5,889,572 volumes. The report gives the name and location of each library, the name of its librarian, and the number of volumes. A report made in 1908 by the United States Bureau of Education in its "Statistics of Public, Society, and School Libraries having 5000 volumes and over," lists only 109 law libraries, but states also whether these libraries are free, free for reference, free for students, subscription libraries free for reference, or subscription only. Law libraries are among the earliest forms of special libraries and their growth in recent years has been rapid. There is a considerable demand for the addition of law books to public libraries ("Law Libraries and the Public," in *Law Library Journal*, January, 1914), due to the desire of citizens more intelligently to perform the functions of democratic government. Law libraries fall into three chief classes: (1) Bar Association libraries; (2) subscription libraries; and (3) law-school libraries. Law-school libraries are further divided into two classes, viz., (1) those serving isolated law schools, and (2) those which serve law schools which form part of a university. By a university law-school library is meant the library of a law school which has a vital, organic connection with the university. The library of the isolated law school performs only one of the functions which a university law-school library should perform. It is used only as a means of assisting technical students of the law. A university law-school library serves this purpose, but at the same time is an essential aid to students in government, philosophy, ethics, history, social science, and economics.

The Association of American Law Schools apparently had in mind only the technical requirements of a law school when in 1912 it decided to "require each school to own a law library of not less than 5000 volumes" in order to be entitled to membership in the Association. Obviously 5000 volumes are not sufficient equipment for a university law-school library. Even as a technical library this small number does not provide for graduate work, for research by professors, nor for the needs of legal writers; and it is even less satisfactory as a source for graduate students in history and politics.

The Association of American Law Schools, however, acted wisely in placing a minimum requirement, for only within recent years have some law schools realized the necessity for providing a library. The importance of the library has increased since the more general adoption, either wholly or in part, of the case system. This system sends students to the original reports and statutes, and prevents too great reliance on textbooks. Its adoption was attended by difficulties which resulted in the preparation of case books. Langdell in the first volume of his "Selection of Cases on Contracts," 1871, states that when he proposed to teach law by means of cases he "was met by what seemed at first to be an insuperable practical difficulty, namely, the want of books; for though it might be practicable in the case of private pupils hav-

ing free access to a complete library, to refer them directly to the books of reports, such a course was quite out of the question with a large class, all of whom would want the same books at the same time." Consequently Langdell began the publication of a series of selected cases on the various subjects of the law. The effect of the publication of case books on the use of the library was unexpected. Where the case system is properly maintained, the result is that case books stimulate the interest and arouse the curiosity of students so that the book of cases is merely a starting point in the investigation of a topic. Law-school libraries therefore are fast increasing in size, eight of them, according to available statistics, having more than 30,000 volumes each. These libraries are:

LAW SCHOOLS	Volumes
Harvard University	150,000
Columbia University	55,000
University of Pennsylvania	50,125
Cornell University	44,000
Northwestern University	40,000
University of Chicago	36,000
Yale University	35,000
University of Michigan	32,000

The case system requires also duplication of books, so that the figures given above necessarily do not indicate different titles but include many duplicates required by students needing to examine the same volume at the same time. The law-school library under modern conditions, therefore, is an essential part of the apparatus for legal students, and its administration is of vital interest to faculty and students. It has become recognized that the use of law books is a technical matter which requires special instruction. The function of the library is of equal importance with that of the classroom and to the duties of the law librarian has been added the teaching of the mechanics of book use. This is done usually by daily assistance in the library, but is often supplemented by lectures and systematic practice work. Courses of instruction in the use of law books are part of the regular curriculum in 30 law schools in the United States, while occasional courses are given in nine others.

One other development in law libraries in the last 25 years is the increased demand for foreign and international law. This demand results first from the study of comparative law in the universities, but second, quite as much, from increased interest in international affairs due to the work of international peace organizations, and the actual development of business as a cosmopolitan concern rather than a national interest.

Bibliography. Waterhous, *Fortescutus Illustratus* (London, 1663); Dugdale, *Origines Juridicales* (ib., 1671); Fortescue, *De Laudibus Legum Angliæ* (ib., 1775); Savigny, *Geschichte des römischen Rechts*, vol. iii (Heidelberg, 1834); *Report to the House of Commons from the Select Committee on Legal Education* (London, 1846); Pearce, *Guide to the Inns of Court* (ib., 1855); *Parliamentary Report of the Commissioners to Inquire into the Arrangements in the Inns of Court and Inns of Chancery for Promoting the Study of the Law* (ib., 1855); Smith, *History of Education for the English Bar* (ib., 1860); Poste, *Gaius* (Oxford, 1871); Hart, *German Universities* (New York, 1874); Muther, *Geschichte der Rechtswissenschaft* (Jena, 1876); Holland, *Institutes of Justinian*

(Oxford, 1881); Jones, *History of the French Bar* (London, 1885); Conrad, *German Universities* (Glasgow, 1885); Roby, *Introduction to the Digest* (Cambridge, 1886); Jones, *Index to Legal Periodicals* (Boston, 1888-89); Lexis, *Der deutschen Universitäten*, vol. i (Berlin, 1873); Gabriel Compayré, *Abélard and the Origin and Early History of Universities* (New York, 1893); *Parliamentary Report of the Commissioners to Consider the Proposed Gresham University in London* (London, 1894); Rashdall, *Universities of Europe in the Middle Ages* (Oxford, 1895); Hunter, *Roman Law* (London, 1897); Rudolf Sohm, *Institutes of Roman Law*, trans. by J. C. Ledlie (3d ed., Oxford, 1901); Gibson and Chuckerbutty, *How to Become a Barrister* (London, 1902); Roscoe Pound, "A New School of Jurists," in *Nebraska University, University Studies*, vol. iv (Lincoln, 1904); *Akademisches Taschenbuch für Juristen* (Berlin, semiannually); *Annuaire de l'instruction* (Paris); *Calendars of the Universities of Oxford, Cambridge, London, Dublin, Edinburgh, and Glasgow*; *The Green Bag* (Boston, monthly); *Le livre de l'étudiant de Paris* (Paris, annually); *Reports of the American Bar Association* (Philadelphia, annually); *Reports of the Commissioner of Education of the United States* (Washington, annually).

LEGAL ESTATE. An estate or interest in lands cognizable at common law, as distinguished from equity, and defined and protected by the ordinary courts of common law, as distinguished from chancery. Strictly speaking, all estates are legal, the expression "equitable estate" having been invented at a comparatively recent date as a convenient description of the rights in equity which a person may have in lands which are legally vested in another. Thus, where lands are conveyed to A in trust for B, the legal estate is in A, the trustee, but B's rights as beneficiary of the trust (*cestus que trust*) are for some purposes conveniently described as his equitable estate in the premises. A, as the legal owner, is the only person entitled to protect the land by common-law process against trespass or disseisin, but the equitable interest of B, on the other hand, may be alienated by him by deed or last will, or will descend to his heirs in the same manner as though it were a legal estate. Such artificial splitting up of the property in land into a legal and an equitable estate has been a common thing in England since the Wars of the Roses (when it was freely resorted to for the purpose of enabling legal owners to escape the burdens and disabilities of such ownership) and in the United States from before the Revolution. Whenever the two estates, whether by alienation, descent, or otherwise, become united in the same person, they coalesce or merge into one, and that one the legal estate. In other words, in that event the equitable estate ceases, leaving only the legal estate surviving. See ESTATE; EQUITY; TRUST; REAL PROPERTY.

LEGAL HOLIDAY. See HOLIDAY; HOLIDAYS.

LEGAL HUNDRED, THE. This is the title of the governing conference which conducts the denominational business of the Wesleyan Methodist church, including the stationing of the ministers and the oversight of all work of the church. It was established by John Wesley in 1780 in a paper known as "the Deed of Declaration." It meets annually and is a self-perpetuating and self-governing body. Membership in the

body is considered a great honor. All Wesleyan ministers are members of the larger body called "the Conference" and are eligible to election in the Legal Hundred when a vacancy occurs as the result of a death or resignation.

LE GALLIENNE, le gal'li-en, RICHARD (1868-). An American writer. He was born in Liverpool, England; graduated from Liverpool College, for seven years was in business, and for a few months in 1889 was private secretary to the actor Wilson Barrett. In 1891 he became literary critic for the *Star*, and soon joined also the staffs of the *Daily Chronicle* and the *Speaker*. Two years later he was involved with Robert Buchanan in a controversy on the question "Is Christianity Played Out?" The outcome was the *Religion of a Literary Man* (1893). In 1899 he wrote *Rudyard Kipling*, a far from eulogistic study of Kipling's art and influence. The range and quality of his general criticism are well represented by *Retrospective Reviews* (2 vols., 1896); and a certain grace that is characteristic of him by *The Book-Bills of Narcissus* (1891), *Prose Fancies* (1st series, 1894; 2d series, 1896), and *Sleeping Beauty and Other Prose Fancies* (1900). In 1898 he visited the United States on a lecture tour, and afterward he lived in or near New York. Among his publications not cited above are: *My Lady's Sonnets* (1887); *Volumes in Folio* (1889); *George Meredith* (1890); *English Poems* (1892); *Robert Louis Stevenson and Other Poems* (1895); *The Quest of the Golden Girl*, a novel (1896), an adaptation of the *Rubaiyat* of Omar Khayyam; *Young Lives* (1899); *Travels in England* (1900); *The Life Romantic* (1900); *An Old Country House* (1902); *How to Get the Best Out of Books* (1904); *Romances of Old France* (1905); *Painted Shadows* (1907); *Little Dinners with the Sphinx* (1909); *The Highway to Happiness* (1912); *The Lonely Dancer and Other Poems* (1914); *The Silk Hat Soldier* (1915), war verse.

LEGAL PROCEEDINGS. In the most general sense, any proceedings, civil or criminal, instituted and carried on in a court of justice or before a judge of such a court acting in his official capacity. The expression, therefore, applies to every stage in the conduct of a suit, from the serving or filing of the original process to the rendering of a final judgment and the execution thereof, as well as to proceedings of a less formal character, as motions (in court or in chambers), orders upon motions, etc., and indeed to judicial business of every sort. In a more restricted sense, the expression is often employed by lawyers to denote proceedings in a court of common law, as distinguished from those carried on in a court of chancery, or equity, or in the court of Admiralty, or in the ecclesiastical courts. See COURT; PROCEDURE.

LEGAL REPRESENTATIVES. Those who, upon the death of a person, become entitled, whether as executors (where such were appointed by will of the deceased) or as administrators (where the deceased died intestate), to administer the decedent's personal estate. Where there are proper executors designated in the will, the personal estate vests in them at once upon the testator's death, but under modern practice the authority of the court of probate, exercised by the issue of letters testamentary to such executors, is requisite in order to enable them to act in all respects as legal representatives of the decedent. Administrators,

however, have no claim upon the estate and no right to exercise any authority with reference to it until qualified by letters of administration conferred upon them by the probate court. Where a will fails to appoint executors, or where the persons designated are no longer living or are ineligible, the court will, upon proper application, appoint an administrator "with the will annexed" (*cum testamento annexo*). The persons entitled to appointment as administrators are determined by statute. See ADMINISTRATION; ADMINISTRATOR; EXECUTOR; PERSONAL REPRESENTATIVE.

LEGAL RIGHTS. See RIGHTS, LEGAL.

LEGAL TENDER. In its broadest sense, an offer or attempt to perform a contract in accordance with the appropriate legal requirements. When thus used, the term includes an offer to perform by doing something, as well as an offer to perform by paying something. In the former case a legal tender, i.e., an offer to perform the contract at the agreed time and place, as in the case of a sale and delivery of a chattel, discharges the person making the tender from all contract liability, although the other party declines the tender. In the same way a legal tender of the amount due on a mortgage or a pledge, even though it be rejected by the creditor, will operate to discharge the property from the lien of the mortgage or pledge.

A tender of payment, however, does not discharge the debtor from his personal obligation. Only actual payment will do this. But a tender not accepted and kept good, i.e., held at the demand of the creditor, will save the debtor from interest accruing thereafter and from the costs of a suit for the debt. In order that a tender of payment be legal, it must be a proffer of money actually produced and accessible to the creditor unless the production be waived by him; the exact amount due must be offered or a sum tendered from which the creditor can take the exact amount, and it must be unconditional.

The term is also used to denote the kind of money that is legally tenderable in the payment of debts. This is regulated with considerable minuteness by modern statutes. In Great Britain Bank of England notes are a legal tender for any sum above £5. Gold coins of the Royal Mint, unless diminished in weight below the statutory standard, are a legal tender for a payment of any amount; its silver coins for an amount not exceeding 40 shillings; its bronze coins for an amount not exceeding one shilling. The crown, with the advice of the Privy Council, may by proclamation declare foreign or colonial coins legal tender. In the United States the various gold coins of the National Mint, the notes of the United States, ordinarily called greenbacks, and a specified class of United States Treasury notes are legal tender for debts of any amount. Silver dollars are a legal tender "for all debts, except where otherwise expressly stipulated in the contract"; while the other silver coins (the half dollar, quarter dollar, and dime) are a legal tender for an amount not exceeding \$10. Minor coins (the five-cent piece and the cent) are tenderable for an amount not exceeding 25 cents. Consult: 3 and 4 Wm. IV, c. 98; the Coinage Act, 1870, 33 and 34 Vict., c. 10; United States Constitution, Art. I, § 10; United States Revised Statutes, §§ 3584-3590, as amended; J. L. Laughlin, "Economic Effects of Legal Tender," in *Yale Review*, vol. x (New Haven, 1902); A. B. Hepburn, *History of Coin-*

age and Currency in the United States (New York, 1903); S. P. Breckenridge, *Legal Tender* (Chicago, 1903); A. R. Hunt, *Treatise on the Law of Tender* (St. Paul, Minn., 1903); J. C. Smith, *Legal Tender: Essays* (London, 1910); and authorities under CONTRACT.

LEGAL-TENDER CASES. A series of cases before the Supreme Court of the United States involving the question whether certain acts of Congress, declaring the notes of the United States lawful money and a legal tender in payment of all debts public and private within the United States, except duties on imports and interest on the public debt, were constitutional. The first case, which brought the question squarely before the court, was *Hepburn v. Griswold* (8 Wallace, 603), a case in which the Court of Errors of Kentucky had held the acts of Congress above mentioned unconstitutional. It was first argued at the December term, 1867, reargued at the December term, 1868, and decided November 27, 1869, by a divided court. Chief Justice Chase and Associate Justices Nelson, Clifford, Field, and Grier were for the affirmance of the decision of the court below, while Justices Miller, Swayne, and Davis dissented. In April, 1869, an Act was passed increasing the number of associate justices of the Supreme Court from seven to eight. Early in 1870 Justice Grier resigned, and Justices Bradley and Strong were appointed to the vacancies. After this reconstruction of the court a motion was made for the reargument of *Hepburn v. Griswold*; which was granted by a vote of five to four, and the constitutional question was again considered and decided in May, 1871. Again was the court divided, but this time a majority, consisting of Justices Miller, Swayne, Davis, Bradley, and Strong, upheld the constitutionality of the Act, while Chief Justice Chase and Justices Nelson, Clifford, and Field dissented. (*Legal-Tender Cases*, 12 Wallace, 457.)

All of the judges agreed that Congress had the power to direct issues of paper currency. The difference of opinion related solely to its power to make such currency a legal tender, especially for existing debts. The majority in *Hepburn v. Griswold*, who were the minority in the later cases, held that this power was neither specifically granted by the Constitution, nor was it necessary to the accomplishment of any granted power. Moreover, they deemed the statutes unconstitutional because they impaired the obligation of contracts and amounted to a taking of private property for public use without compensation. It was admitted by the minority in *Hepburn v. Griswold*, and the majority in the later cases, that the laws did impair the obligation of contracts made before their passage, but it was said, "While the Constitution forbids States to pass such laws, it does not forbid Congress." The Fifth Amendment, which forbids taking private property for public use without just compensation or due process of law, it was declared, had always been understood as referring only to a direct appropriation, and not to consequential injuries resulting from the exercise of lawful power. And, finally, it was held that the statutes were passed in the proper exercise of the power to borrow money and maintain the army and navy in time of war.

In 1878 Congress directed that the legal-tender notes of the United States which were redeemed, or received into the Treasury from any source, should be reissued and kept in circulation. As

the final decision in the legal-tender cases above referred to had been rested in part upon the necessity of the earlier legislation as a war measure, the validity of the Act of 1878 was assailed with much confidence. However, with but a single dissent (that of Justice Field), the court held that Congress has power to make United States notes a legal tender in the payment of private debts in time of peace as well as in time of war. "Congress," said the court, "has the power to issue the obligations of the United States in such form, and to impress upon them such qualities as currency for the purchase of merchandise and the payment of debts as accord with the usage of sovereign governments. The power, as incident to the power of borrowing money, and issuing bills or notes of the government for money borrowed, of impressing upon those bills or notes the quality of being a legal tender for the payment of private debts, was a power universally understood to belong to sovereignty in Europe and America at the time of the framing and adoption of the Constitution of the United States. The governments of Europe, acting through the monarch or the legislature, according to the distribution of powers under their respective constitutions, had and have as sovereign a power of issuing paper money as of stamping coin."

The foregoing decision has closed all judicial discussion, and declares the rule of law upon this point. Whether a national paper currency shall be a legal tender is now a question for the political forum only. Consult. *Legal Tender Case*, *Juilliard v. Greenman* (110 U. S., 421, 1884); Thayer, "Legal Tender," in *Harvard Law Review* (1887); George Bancroft, *A Plea for the Constitution* (New York, 1886); Miller, *Lectures on the Constitution of the United States* (ib., 1891).

LEGARDEUR DE SAINT-PIERRE, JACQUES. See SAINT-PIERRE, JACQUES LAGARDEUR DE.

LEGARÉ, le-gré', HUGH SWINTON (1789-1843). An American jurist and statesman, born in Charleston, S. C., of Huguenot stock, Jan. 2, 1789. He died in Boston, Mass., June 2, 1843. Though in youth of delicate health, he attended South Carolina College, then studied law for three years; visited Edinburgh, where he completed his education, and traveled on the Continent. Returning home, he devoted himself to planting for a time, was soon elected to the Legislature, and then began to practice law in Charleston. He was elected to the Legislature once more (1824-30), and was afterward made Attorney-General of the State, being at the same time editor of the *Southern Review*, which he helped found (1828-32), and to which he contributed learned articles. During the Nullification crisis he opposed extreme measures, although he was always in favor of States' rights. From 1832 to 1838 he served as chargé d'affaires at Brussels. On his return he was elected to Congress, where he served one term, winning reputation as a debater on the proslavery side. Opposition to the subtreasury scheme caused his defeat and drew him over to the Whigs. In 1841 he became Attorney-General under Tyler, and served until his sudden death, having also conducted the State Department after the retirement of Webster. He was a man of profound learning, especially in the civil law, and his essays on literary and general topics were equal to anything of the kind produced at the

time in America. His writings were edited by his sister, Mary S. L. Bullen, in two volumes (1846).

LEGASPI, MIGUEL LÓPEZ DE. See LÓPEZ DE LEGAZPI.

LEG'ATE (Lat. *legatus*, ambassador, deputy, lieutenant, governor, from *legare*, to send on a commission, bequeath). A title most commonly applied to the diplomatic and other representatives of the Pope outside of Rome. Legates are of three kinds: (1) *legati a latere* (from the side); (2) commissioners or nuncios, *legati missi*, *nuntii apostolici*, with a minor class of *internuntii*; (3) legates by virtue of their office, *legati nati*. The dignity of a legate *a latere* is the highest among legates, and has been confined to cardinals since the decree of Innocent IV (1243-54) on the subject. Legates *a latere* are either ordinary or extraordinary; the first commonly governed provinces within the Papal States; the second are commissioned to visit foreign courts for special purposes. The *legati missi*, or nuncios, correspond to the ambassadors or ministers maintained by secular states at foreign capitals. The dignity and jurisdiction of a *legatus natus* are permanently attached to a metropolitan see by papal concession; the Archbishop of Canterbury held this position up to the Reformation, and Cardinal Richelieu attempted to secure it for himself. Legates formerly exercised an immediate jurisdiction as representing the holy see; hence frequent conflicts with local episcopal authority arose. To quiet these conflicts, the Council of Trent (Sess xxiv, cap. 20) decreed that legates were not to presume on the strength of any faculties whatsoever to impede the bishops in matrimonial causes or in those of criminal clerks, nor to take proceedings unless recourse had been had to the bishop and he had neglected to act. Vienna, Madrid, Lisbon, Bavaria, Belgium, and Brazil have nuncios. A legate with the same powers but a lower rank is the *internuncio*, maintained in Argentina and Chile. An authority somewhat similar to the ancient legatine jurisdiction was granted by Pope Leo XIII to a permanent apostolic delegate for the United States (established in 1893) and to one for Canada (1899); and similar officials have been sent also to the Philippines and to Cuba to adjudicate the questions growing out of the Spanish-American War of 1898. Consult E. L. Taunton, *The Law of the Church* (St. Louis, 1906).

LEGA'TION. 1. An ambassador, minister, envoy, legate, or other diplomatic agent of a foreign power, together with his suite, or the persons associated with him in his official capacity. 2. The official residence of such a diplomatic agent in the country to which he is accredited, together with the compound or inclosure within which it is situated. By the fiction of extraterritoriality (q.v.) the residence of a foreign minister is deemed for many purposes to be under the jurisdiction of the power which he represents and thus exempt from the ordinary jurisdiction of the state to which he is accredited. It is accordingly entitled to immunity from the execution of compulsory legal process of the latter. A legation may, in some cases, serve as an asylum for political refugees, but never for ordinary criminals. See **ASYLUM**; **DIPLOMACY**; **INVOLABILITY**; **MINISTER**.

LEGATO, lá-gá'tó (It., tied). In music, a direction that the notes are to be played as if

they were bound or tied together, or in such a manner that the one note flows without break into the following one.

LEGAZPI, or **LEGASPI**, MIGUEL LÓPEZ DE. See LÓPEZ DE LEGAZPI, or LEGASPI, MIGUEL.

LEGEND, lě'jend or lě'jend (OF. *legende*, Fr. *légende*, from ML. *legenda*, story, from Lat. *legenda*, nom. pl. neut. of *legendus*, to be read, gerundive of *legere*, to read). In the technical language of folklore, a narrative relating to a sacred person or locality and connected with religious belief or worship. Legends were primarily lives of Christian saints, because these were included in the selections (*legenda*) to be read in public worship. (See **LESSON**.) In the early Church, on the anniversary of a martyr, it appears to have been usual to read the story of his passion. Later, readings from lives of the saints formed a part of monastic worship (office of nocturns). Different churches, according to local ideas and stories, enlarged the lives of their respective saints, so that in time it became necessary to gather and coördinate the material. As a result of this process, towards the end of the thirteenth century, Jacobus de Voragine (James of Varagium) composed the famous *Legenda Aurea*, or Golden Legend. The term "legend" there denoted the entire work, but subsequently it came to designate the story of any particular saint. The tendency of such narratives was towards a presentation continually more fanciful. Legends, at first brief and simple, became long and imaginative. Consequently they came to be regarded with suspicion, so that the word was finally taken to signify any narrative professing to be historical, but in reality of a traditional and imaginative character.

In regard to origins, the general principle is that a story primarily historical (though from the first often also semifabulous) becomes, in course of time, more and more imaginative through absorption of material from current literature or folklore, in such a manner that the actual occurrence is resolved into the popular ideal. This process has by no means ceased; as examples may be cited the accounts of modern Russian-Jewish rabbis, to whom are popularly ascribed wonderful qualities bestowed after the pattern of Talmudic authors. Thus, the personality of the founder of the fanatical sect of the Chasidim, Baal Shem (Israel Besht), who lived in the eighteenth century, has become obscured in the accounts of his admirers, who represent him as a miracle worker, predicted by prophets and encompassed with an aureole; the man himself seems to have been a quiet mystic. The unhistorical elements which have been incorporated in legends may be referred to several categories. For instance, a great influence has been exercised by the tendency to repeat types and events of the Old and New Testaments. A second class of legendary incidents arises from a confusion of fact and metaphor; e.g., inasmuch as the name Christopher signifies Christ-Bearer, the saint was represented as a giant carrying on his shoulders the infant Jesus. Yet a third class represents the survival of ideas and beliefs belonging to more ancient faiths, as in the (relatively late) story of the rescue by St. George of the daughter of a king of Libya, which preserves the tale of the dragon slayer Perseus.

A word must be said on the literary use of Christian legends. During the Middle Ages

their versification continued to be a favorite form of poetic composition. Rhymed accounts of Saints Eulalia and Alexis belong to the principal monuments of old French literature. In Germany legends were poetically treated in the thirteenth century by Hartmann von Aue, Rudolf von Ems, and Konrad von Würzburg. The Renaissance and the Protestant Reformation put an end to this literary interest, which, however, was renewed during the romantic revival of the eighteenth and the early part of the nineteenth century. Legend was then considered less as veritable history than as an expression of sentiment and folk thought.

From a primal application to Christian hagiology the legend has been extended to include histories belonging to other faiths. It is in the nature of things that every people should possess a multitude of traditional narratives, taken to be historical and explanatory of their usages and beliefs. Mohammedan saints also have their legends, which have not, however, found a place in the authorized worship. In dealing with the religion of ancient Greece it is usual to distinguish legends of heroes from myths concerning the gods, as if the former had more of an historical element, while the latter were more purely imaginative; but this distinction is by no means clear or well defined. Among American Indians the name of legend has been given to sacred histories which relate to personages honored in the cult, and which frequently supply information respecting the origin and migrations of the tribe. It is probable that similar legends, of a quasi-historical character, constitute a universal property of races in a primitive condition of culture.

Bibliography. For the manner in which legends became part of public worship, as well as for an account of Old English legends, consult Horstmann, *Altenglische Legenden* (Heilbronn, 1881). For remarks on classification and origin of legends, L. J. A. Maury, *Croyances et légendes du moyen âge* (Paris, 1896). For literary use of legends: Btlow, *Zur Nachfolge Christi* (Leipzig, 1859); A. H. Billings, "Guide to the Middle English Metrical Romances Dealing with English and Germanic Legends and with Cycles of Charlemagne and Arthur," in *Yale Studies in English*, No. 9 (New York, 1901); Arnold Van Gennep, *Origines des légendes* (Paris, 1907); Hippolytus Delehay, *Legends of the Saints* (New York, 1907); H. A. Guerber, *Myths and Legends of the Middle Ages: Their Origin and Influence on Literature and Art* (London, 1909); Waterman, "The Explanatory Element in the Folk-Tales of the North-American Indians," in *Journal of American Folk-Lore* (Boston, 1914). For legends of Mohammedans: Weil, *Biblische Legenden der Muselmänner* (Frankfort, 1845); Burdick, *Oriental Studies* (New York, 1905); also Gottlieb von Leon, *Rabbinische Legenden* (Darmstadt, 1913); D. A. Mackenzie, *Egyptian Myth and Legend* (London, 1913). For American-Indian legends: Matthews, "Navaho Legends Collected and Translated," in *Memoirs of the American Folk-Lore Society*, vol. v (Boston, 1897); Canfield, *Legends of the Iroquois* (New York, 1904). For the literature of Christian lives of the saints and legends of the Virgin, consult authorities referred to under the corresponding titles. The *Legenda Aurea* of Jacobus de Voragine was printed in English translation by Oaxton (1484); recently reprinted by

Ellis (London, 1900). See **MARTYRLOGY**; **MYTHOLOGY**; **SAINT**.

LEGEND. In music, the title of compositions that are based on some legend of saints. But to-day the title is frequently given by composers to shorter instrumental compositions of an elegiac character which have no underlying programme whatever.

LÉGENDE DES SIÈCLES, lă'zhänd' dà sê-â'kl', La (Fr., The Legend of the Centuries). A collection of brilliant narrative poems by Victor Hugo (1859).

LEGENDE VON DER HEILIGEN ELISABETH, lă-gên'de fôn dêr hî'lî-gen ê-lê-zà-bêt. An oratorio by Liszt (q.v.), first produced in Budapest, Aug. 15, 1865; in the United States, Feb. 28, 1884 (Brooklyn).

LEGEND OF GOOD WOMEN. A poem by Chaucer, written probably in 1385. He intended to give the stories of 19 celebrated women of antiquity, but finished only nine. The plan was taken from Boccaccio's *De Claris Mulieribus*, but Chaucer evidently drew also from Ovid, Livy, Statius, Vergil, and a Latin translation of Plutarch's *Lives*. Traces of Dante and Guido delle Colonne can be seen. Tennyson's *Dream of Fair Women* was modeled on this poem.

LEGEND OF JUBAL, THE. The title of a collection of poems by George Eliot (1874).

LEGEND OF MONTROSE, A. A novel by Sir Walter Scott (1819).

LEGEND OF SLEEPY HOLLOW, THE. A tale by Washington Irving, in the *Sketch Book*. The tradition of the Headless Horseman, connected with the spot, is used by a rival for the hand of Katrina van Tassel to put a stop to the courtship of Ichabod Crane, the awkward schoolmaster.

LEGENDE, le-zhân'dr', ADRIEN MARIE (1752-1833). A French mathematician, born in Paris and educated in the Collège Mazarin. He early became professor of mathematics in the Ecole Militaire and later in the Ecole Normale at Paris. He was a member of the Academy and of the Bureau of Longitudes and in 1816 was appointed examiner for admission to the Ecole Polytechnique. In 1824, in an election at the Academy, he was deprived of his pension because he did not vote for the candidate of the government, and, as a result of this loss, he died in poverty. Legendre was one of the leaders in introducing the metric system and was associated with Prony in preparing the great centesimal trigonometric tables. He contributed extensively to the theory of attraction (from 1783) and introduced into the discussion of the attraction of spheroids the special cases of Laplace's coefficients which bear his name. He also wrote important memoirs (1787-88) on geodesy, introducing a method of treating the spherical triangle as plane, provided certain corrections are made with respect to the angles. The method of least squares (q.v.) was published in his *Nouvelles méthodes* mentioned below, although Gauss had already used it. The celebrated law of quadratic reciprocity (see **NUMBERS**), which Gauss called "the gem of arithmetic," appeared in a memoir of 1785, but the first proof was given in his *Théorie des nombres*. The most important of Legendre's works is the *Traité des fonctions elliptiques*, upon which he worked for 40 years. It is a tribute to his generosity that just as his work was appearing the labors of Abel and Jacobi became known and were at once recognized by him as superior

to his own. He even went so far as to embody them, with due credit, in his last volume. (See FUNCTION.) The work which had the greatest popularity, and which was a classic for a century, was his *Eléments de géométrie* (1794; 15th ed., 1881; Ger. trans. by Crelle, 6th ed., 1873; Eng. trans., 1860). The later editions of this work contain his proof of the irrationality of π and π^2 . His other works are: *Essai sur la théorie des nombres* (1798; 4th ed., 1900; Ger. trans. by Maser, 1886); *Nouvelle théorie des parallèles* (1803); *Nouvelles méthodes pour la détermination des orbites des comètes* (1805); *Exercices de calcul intégral* (1807; new ed., 3 vols., 1819); *Traité des fonctions elliptiques et intégrales Eulériennes* (3 vols., 1826-32). Consult J. B. Elie de Beaumont, "Memoir of Legendre," translated by C. A. Alexander, in *Smithsonian Institution, Annual Report*, 1867 (Washington, 1868).

LEGENDRE, LOUIS (1752-97). A French Revolutionist. Born at Versailles, he established himself in Paris as a butcher. When the Revolution broke out, his rude eloquence made him one of the popular leaders who led in the capture of the Bastille. He became a member of the Jacobin Club, one of the founders of the Cordeliers Club, and an enthusiastic partisan of Danton. A member of the Convention, he was sent by that body on missions to Lyons and to Seine-Inférieure. He was obliged to abandon Danton when the latter was arrested, and later he participated in the reaction that led to the fall of Robespierre, the suppression of the Jacobins, and the impeachment of Carrier. Finally he was elected President of the Convention and became a member of the Council of Ancients.

LEGENDRE, NAPOLEON (1841-1907). A Canadian poet and essayist. He was born at Nicolet, Province of Quebec, and was educated by the Jesuits in Montreal. He studied law, was called to the bar in 1865, and in 1876 entered the provincial civil service. He was one of the original fellows of the Royal Society of Canada (1872) and contributed many papers to its *Transactions*. He published: *Echos de Québec* (2 vols., 1876); *A mes enfants* (1876); *Les Perce-Neige* (1886), poems; *Mélanges* (1887); *Nos Écoles* (1890); *La langue française au Canada* (1892).

LEGER, le-zhà', LOUIS PAUL MARIE (1843-). A French writer and linguist, born at Toulouse. He was educated at Douai and Paris and early turned his attention to the study of Slavic languages and literatures. In 1864 he went to Bohemia, and this visit was followed by many others to that country, Hungary, Poland, and especially to Russia. After teaching at the Sorbonne he was at the Ecole Spéciale des Langues Orientales, where he became full professor in 1877. In 1885 he was appointed professor of the Slavic languages and literatures at the Collège de France. He was made a member of the Institute in 1900. Besides his contributions to the important journals of the day, he wrote such works as *Études slaves* (1875-80); *Nouvelles études slaves* (1880; 2d series, 1886); *Contes slaves* (1882); *Chronique dite de Nestor* (1884); *La Save, le Danube, et le Balkan* (1884); *La Bulgarie* (1885); *Histoire de l'Autriche-Hongrie* (1878, 1889); *Russes et Slaves* (1890-99); *La littérature russe* (1892); *Le monde slave* (2d ed., 1897-1902); *L'Évangéliste de Reims* (1899); *La mythologie slave* (1902);

Souvenirs d'un slavophile (1905); two art monographs, *Moscow* (1904) and *Prague* (1907); *Gogol* (1913); *Serbes, Croates, et Bulgares* (1913).

LEGERDEMAIN, ləj'ər-də-mān' (Fr., sleight of hand). The art of performing tricks of deception—in the narrower sense, with the hands alone; broadly, with any aid of physical appliances.

The arts of magic, seemingly as ancient as human intelligence, are of two general types: (1) forms such as necromancy, divination, sorcery, or enchantment, perhaps astrology, in which the magician works by means of spells, incantations, or of some occult science supposed to give him knowledge of superhuman agencies and power to direct them; (2) legerdemain and jugglery in which the magician displays his own skill at wonder working. Ordinarily, among primitive peoples, the magician—witch doctor, medicine man, or what not—is himself deceived by the usages of magic of the first type, receiving them as mysteries of his cult and implicitly relying upon their efficacy. Magic of the second type, however, is used and understood by him merely as a means of impressing his more ignorant fellowmen with a sense of his power; it is conscious deception. This distinction is significant in the history of magic and is maintained even in modern civilization; for, although many forms of the first type of magic are imitated by tricks of legerdemain, notoriously in the spiritualistic séance, there still persists credulity in occultism in connection with the frankest recognition of the natural causes of the deceptions of jugglery.

Legerdemain and jugglery are sometimes grouped under the title "natural magic," probably on the analogy of "natural philosophy," since so many of their deceptions are applications of simple principles of physics and chemistry; but the two terms are not precisely synonymous. Jugglery is the broader term, denoting not only tricks of deception, but performances with paraphernalia demanding great skill and dexterity, in which no deception is intended. Legerdemain, however, is confined simply to tricks of deception. The diverse development is perhaps illustrated in the jugglers of India and those of Japan. The performances of the former so often cited, such as the mango trick, the basket trick, and the snake-charming trick, are properly legerdemain, depending for their deception upon some type of substitution; whereas the feats of the Japanese are very largely feats of equilibration, as the balancing of objects upon various parts of the body, demanding great skill, but not, as a rule, designed to deceive.

In legerdemain proper the essential feature is generally an act of substitution, as when, e.g., the performer seems to discover eggs, money, and the like objects in places previously perceived to be empty. Often the substitution requires for its efficiency elaborate mechanical devices, though the most skillful thaumaturgists prefer to rely upon their own manual dexterity. The power of deceiving is almost invariably due to power of diverting the percipient's attention at a crucial moment—the moment of the substitution. In this even more than in celerity of movement lies the essence of the art. The psychological principles underlying the deception rest wholly upon the laws of attention. In proportion as attention is

intensified, its scope becomes narrowed; as, e.g., concentrated inspection of any object renders stimuli affecting the marginal regions of the field of vision practically invisible. It is, accordingly, the first duty of the performer to centre the percipient's attention as strongly as possible upon the object matter of the trick to be performed. Succeeding in this, he gains a practical control over the percipient's range of vision and has little difficulty in diverting it at the crucial moment. It may thus be said that the keenest scrutiny is the likeliest to fall victim to the trick.

The part of the legerdemainist himself, however, is one of great difficulty; for he must be able to discoördinate his actions and diversify his attention to a degree only attainable by long practice. His hands and eyes must be trained to work apart—the hands performing the substitution, eyes and bodily pose misleading the percipient. Similarly his attention must comprehend and direct many diverse details at once.

The origin of thaumaturgy is of remote antiquity. Savages the world over have developed cults and mysteries which transmit, with other lore, tricks of legerdemain from generation to generation. The Navaho Indians perform a trick with the cactus almost identical with the mango trick of India, and nearly all of the simpler performances are known to widely separated peoples. The wonder-workers of Egypt and Mesopotamia were anciently famous, and many of the miracles recorded indicate that the Roman priests utilized principles of hydrostatics and optics for the production of illusions. Jugglers were known among the Anglo-Saxons, but appear to have attained no great proficiency. Indeed, it was only with Robert Houdin (1805–71) that legerdemain became a matter of science. Houdin built many clever contrivances and wrote several books on the subject, never claiming to be a wonder-worker in a miraculous sense, but only a clever manipulator. The Herrmanns, Houdini, and Kellar have since advanced the art to a degree far in advance of any previously attained. On the other hand, many impostors have utilized legerdemain to produce "materializations" of spirits, clairvoyant readings, slate writings, and the like. Hypnotism has also been widely used by professional exhibitors—often fraudulently; and very many tricks which are merely exhibitions of known natural principles or feats of apparent strength, as the supporting of weights on the pelvic arch, have been passed as thaumaturgic phenomena.

Bibliography. J. N. Pousin, *Nouvelle magie blanche dévoilée* (Paris, 1853–54); id., *Sorcellerie ancienne et moderne expliquée* (ib., 1858–59); J. E. Robert-Houdin, *Secrets de la prestidigitation et de la magie* (ib., 1868; trans. by Hoffmann, London, 1880); Alfred Binet, "Psychology of Prestidigitation," in *Smithsonian Institution, Annual Report, 1894* (Washington, 1896); A. A. Hopkins, *Magic* (New York, 1898); C. J. Carter, *Magic and Magicians* (Chicago, 1903); Charles Roitars, *Utility of Suggestion in Magic* (New York, 1906); Harry Houdini, *Unmasking of Robert Houdin* (ib., 1908); T. N. Downs, *The Art of Magic* (Buffalo, 1909); James Day, *Conjuring Apparatus Up-to-Date* (London, 1912); Elbiquet (pseud.), *Text-Book of Magic* (ib., 1913); Camille Gaultier, *La prestidigitation sans appareils* (Paris, 1914);

E. E. Noakes, *Magical Originalities: A Chat on Practical Magic* (London, 1914). See FIRE EATING; MAGIC.

LEGER (lɛʒ'ɛr) **LINES** (OF. *legier*, *leger*, Fr. *léger*, It. *leggiere*, light, from Lat. *levis*, light). In music, the name of the short lines above or below the staff, which are used to express those notes which lie beyond the five lines of the staff. The spaces between these auxiliary lines are called leger spaces. See MUSICAL NOTATION, *Clefs*.

LEGGE, JAMES (1815–97). A Scottish missionary and Sinologist, born at Huntley, Aberdeenshire. He was educated at the Aberdeen Grammar School and Aberdeen University, where he graduated in 1835, and proceeded to London, entering Highbury Theological School. Having been ordained, he was sent in 1839 by the London Missionary Society to the East as a missionary to the Chinese. Until 1842 he was stationed at Malacca, but when Hongkong became a British colony in that year he moved thither. From the first he was an earnest and industrious student of Chinese, giving his attention chiefly to the Chinese classics. His missionary labors, however, were not neglected, and during his years of service in that colony he baptized no fewer than 600 converts, besides acting as the pastor of the Union Church. In 1876 he became professor of Chinese language and literature at Oxford University, a chair which had been founded especially for him.

His greatest and most lasting work was his translation of the Chinese classics. Between 1861 and 1873 he issued at Hongkong eight volumes, containing the Chinese text, translation, and most elaborate and learned prolegomena, *The Four Books*, containing "The Analects of Confucius," "The Great Learning," "The Doctrine of the Mean," and *Mencius*; the *Shu King*, or "Book of History"; the *Shih King*, or "Book of Poetry"; and the *Ch'un Ch'un*, or "Spring and Autumn" (the only work ever written by Confucius), with Tso-chuan's *Commentary*. The remaining books of the series—the *Yih King*, or "Book of Changes", the *Li Ki*, or "Book of Rites"; the *Hiao King*, or "Book of Filial Piety"—were afterward published at Oxford, without the Chinese text, and are found in the "Sacred Books of the East Series," edited by Max Müller. He also prepared and issued for the use of general readers *The Four Books* without the Chinese text, and the critical notes. In 1886 he also prepared and issued the text and translation of *A Record of Buddhist Kingdoms* by the Chinese pilgrim Fa-Lien (399–414 A.D.), with an introduction and critical notes; and in 1891, in the "Sacred Books of the East Series," *The Texts of Taoism* (the Tao-teh-king, Chwang-tse, and the Kan-ying Pien) in two volumes. He also published a volume on *The Religions of China* (1881). He wrote *Notions of the Chinese Concerning God and Spirits and Confucianism in Relation to Christianity* (1877).

LEG'GETT, MORTIMER DORMER (1831–96). An American soldier, born in Ithaca, N. Y. He early removed to Ohio and there studied at first medicine and afterward law, which last he practiced with success. From 1855 to 1858 he was professor of pleading and practice in the Ohio College of Law and in 1858 became superintendent of schools at Zanesville. At the outbreak of the Civil War he helped raise the Seventy-eighth Ohio Volunteer Infantry, of

which, in January, 1862, he was commissioned colonel, and which he commanded at Fort Donelson, Shiloh, and Corinth. In November, 1862, he was appointed brigadier general of volunteers and participated in the Vicksburg campaign, during which he was wounded. Later he commanded the Third Division of the Seventh Army Corps on Sherman's march to the sea. He was brevetted major general of volunteers in July, 1864, and was commissioned major general a year later. He was appointed United States Commissioner of Patents in 1871 and held that position until 1881, when he resigned to resume his private practice.

LEGGETT, WILLIAM (1802-39). An American author, born in New York City. He was educated at Georgetown College, D. C., entered the navy in 1822 as midshipman, and served until 1826. During this time he had written a volume of poems entitled *Leisure Hours at Sea*, and after resigning from the navy he commenced his literary work as editor of the *Critic*, a weekly journal, which was afterward united with the New York *Mirror*. Several of his articles which appeared in the *Mirror* and other magazines he subsequently published in a volume with the title of *Tales by a Country Schoolmaster* (1835), which was followed by *Naval Stories*, published the same year. In 1829 he became one of the editors of the *Evening Post* and in connection with this work attracted attention by vigorously denouncing those who mobbed the Abolitionists in 1835 and by earnestly defending the right of free discussion. Retiring from the *Post* in 1836, he established the *Plaindealer*. He was appointed by President Van Buren diplomatic agent to Guatemala, but died suddenly at New Rochelle while preparing for his departure. He had many devoted friends, among whom was William C. Bryant, who wrote a highly eulogistic poetical tribute to his memory. Consult J. G. Wilson, *Bryant and his Friends* (New York, 1886).

LEG'HORN, lēg'hörn or lēg-örn' (It. *Livorno*, ML *Liburnum*, Lat. *Portus Hercules Liburni*, *Portus Labronis*). A city of Italy, in Tuscany, chief town of the Province of Leghorn (Map: Italy, C 3). The Province of Leghorn is the smallest in Italy, consisting only of the Circle (coextensive with the commune) of Leghorn and the Circle of Portoferraio, i.e., it consists of the city of Leghorn with its outlying district, the island of Elba, and a few smaller islands (Gorgona, Pianosa, Monte Cristo). The total area of the province is 133 square miles, its population (de facto) in 1901 was 123,877 and, in 1911, 135,765. The city of Leghorn is situated on the Mediterranean, 9 miles south of the mouth of the Arno and 12 miles by rail southwest of Pisa; by rail it is 62 miles west-southwest of Florence, 113 miles southeast of Genoa, and 208 miles northwest of Rome. It is the third largest commercial port in Italy (after Naples and Genoa) and is almost entirely modern. In 1551, it is said, the town had only 749 inhabitants. For an Italian city it is strikingly deficient in examples of Renaissance art. The city has broad, straight, well-paved streets, large public squares, and splendid boulevards. The main street, on which are all the principal shops, is the Via Vittorio Emanuele, running east-northeast from the harbor and crossing the broad Piazza Vittorio Emanuele, in which is an equestrian statue of King Victor Emmanuel II. In the Piazza Garibaldi

is a monument to the great patriot; in the Piazza Carlo Alberto are colossal statues of Ferdinand III and Leopold II, the last grand dukes of Tuscany; in the Piazza Cavour is a marble statue of the statesman; in the Piazza Micheli a statue of Ferdinand I, Grand Duke of Tuscany. Besides the seventeenth-century cathedral there are 23 churches (among them Evangelical, English, Greek, Armenian, Waldensian, Scottish), and a handsome synagogue founded in 1581. The most interesting public building is the royal castle. There are several good hotels and a number of sea-bathing establishments with cafés and terraces. Leghorn's popularity as a bathing resort is constantly growing, and during the season, from July 15 to September 15, many of the villas along the shore to the south are occupied by English and Americans. Electric cars connect the railway station with the bathing establishments and with the suburban summer resorts of Ardenza and Antignano. The new race track near Ardenza is one of the best in Italy. Montenero, 2½ miles from Ardenza, is a resort for pilgrims, having an image of the Madonna much esteemed by sailors. The water supply comes from the hills of Colognole, 13 miles away, and is stored in an immense reservoir. Educational institutions are the Royal Naval Academy, the Royal Commercial Marine Institute, a lyceum, a Gymnasium, and a public library with 71,200 volumes in 1913. Charitable institutions are two pesthouses, a great hospital (founded in 1622), an asylum for foundlings, and an orphan asylum. Leghorn is the seat of a bishop and of an American and other foreign consuls.

The inner harbor (Porto Vecchio or Mediceo) admits vessels of small draft only, the outer harbor (Porto Nuovo), added in 1854, is protected by a semicircular mole ⅝ of a mile long, with lighthouses at both ends. From them is to be had a comprehensive view of the city and of the islands of Elba, Gorgona, and Capraia. On a rocky island in the outer harbor is a lighthouse (Faro) erected in 1303. Numerous canals intersect the town, and a ship canal connects the harbor with the Arno. Leghorn has regular steamship communication with Genoa, Corsica, Malta, the Levant, Marseilles, and Hamburg. The tonnage entered and cleared in 1900 and 1904 was 2,532,000 and 4,226,000 respectively; in 1911, 5,108,172 (4607 vessels, of 2,557,937 tons, entered, and 4580 vessels, of 2,550,235 tons, cleared). The principal exports are cotton, wool, and raw silk to the Levant, other exports are olive oil, wine, candied fruit, borax and boracic acid, tartar, soap, hemp, hides, quicksilver, furniture, and marble. The principal imports are grain and petroleum from Russia via the Black Sea; other imports are spirits, sugar, tobacco, cotton, wool, hides, and coal. In 1911 imports were valued at 143,881,000 lire, and exports at 95,771,000 lire. The armored vessels of the Italian navy are built at the works of the Orlando Brothers. Among the manufactures are glass, porcelain, coral ornaments, and chemical products. There are copper, brass, and iron foundries. The de facto population of the commune in 1901 was 98,321 (of whom 79,342 dwelt in the city proper, and the remainder in the suburbs); in 1911, 105,315. Leghorn became important only after the decay of the neighboring city of Porto Pisano, the harbor of which is now entirely filled up. It came into the possession of Florence in 1421.

was fortified by Alessandro de' Medici, and was declared a free port (the first in the Mediterranean) by the Grand Duke Cosimo I. Under the Law of 1867 it ceased to be a free city. Consult Vivoli, *Annali di Livorno* (4 vols., Leghorn, 1842).

LEGIO FULMINATA. See LEGION, THE THUNDERING.

LEGION. See INFANTRY.

LEGION (Lat. *legio*, properly a levy, choice, from *legere*, to choose, select, Gk. *λέγειν*, *legein*, to choose). The tactical unit of the Roman army. In early Rome *legio* denoted the entire levy, the whole army, which consisted ipso facto of all the citizens, i.e., patricians, capable of bearing arms. Thus, it was an irregular force that, in time of need, could be summoned to combat by the chief. Romulus is said to have organized a force consisting of 3000 *milites*, or armed infantrymen, and 300 *celerēs*, or horsemen (knights; see EQUESTRIAN ORDER); these, continued the tradition, were furnished in equal numbers (1000 *milites* and 100 *celerēs*) by each of the three tribes, Ramnes, Tities, and Luceres, into which the citizens were divided, and commanded severally by the *tribunus militum* and the *tribunus celerum*. See ROME, the third paragraph under the caption *History of Rome during the Earliest or Regal Period*.

It was King Servius Tullius, however, according to the tradition of the ancients, who first organized the army on a substantial military basis. In accordance with the democratic reforms of the time, the warriors were not drawn exclusively from the patriciate; the lower classes also, or *proletarii*, were permitted to bear arms. The *iuniores*, or younger men, from 17 to 46, formed the backbone of the army and bore the brunt of actual fighting in the field; the *seniores*, elder men, from 46 to 60, defended the city and took the field only in times of pressing need. (See ROME, the last paragraph under the caption *History of Rome during the Earliest or Regal Period*.) They fought in the form of the *phalanx*, or solid body, without any regular division into battalions, except on the basis of age and rank described above; a system that was maintained until the beginning of the fourth century B.C., when a new reform is said to have been organized by Camillus (390 B.C.). This new system had for its basis the *legio*, or army corps, two of which formed the *exercitus consularis*, or consular army. Thus, the total levy for the year was now often four legions, two serving under each consul. The legion was commanded by six *tribuni militum*, always members of the nobility, who took turns, by the day or the month, in the actual command. Legions were always enrolled for a single year's campaign and dismissed at the end of the season. The warriors were compelled to furnish their own equipment, except that the *proletarii* were equipped by the state. With the gradual conquest of Italy, however, and the numerous wars with nations beyond the sea, this system of annual citizen soldiery became impossible, and war tended to become a profession.

The army, as organized on the legionary system of the Republic, was divided as follows: the legion consisted normally of 4200 infantry and 300 cavalry; the infantry body (aside from the *proletarii*) was divided into 30 maniples, and each manipulus was subdivided into two centuries, or "companies." But there was also a division according to age and experience. Each

legion had 1200 *hastati*, or younger men, forming the first line in battle, 1200 *principes*, men of riper years, and 600 *triarii*, or veterans; and this was the legion proper, as divided into maniples and centuries. They were armed with bronze helmets with plumes (*cassis*), leather cuirass (*lorica*), metal greaves (*ocreae*), a long semicylindrical shield (*scutum*), and a short, pointed, double-edged sword (*gladius*). The *hastati* and the *principes* carried also each two pila, or long, heavy javelins, while the *triarii* bore lighter lances. In addition to the above, each legion had 1200 *velites*, light-armed troops drawn from the *proletarii*, armed with leather helmet (*galea*), round shield (*parma*), and short sword (*gladius*). The 300 horsemen (*equites*) attached to the legion were divided into 10 *turmae* of 30 horse each, each *turma* under the command of three decurions. Each half of the manipulus was captained by a centurion and had its own standard, while the legion as a whole had its eagle (*aquila legionaria*; see EAGLE). A new reform in army organization was due to Gaius Marius at the end of the second century B.C. The *census*, or position according to social rank, wholly ceased to be regarded. The Italian allies of Rome were admitted to the legions. The class of *velites* was abolished, and the cavalry was no longer made up exclusively of Roman *equites*. The army was now a permanent body, serving for pay, 20 years was the usual term of service. An important change was effected also in the internal organization of the legion. Its tactical division was no longer the manipulus, but the cohort (*cohors*). The three lines were assimilated, and the legion was divided into 10 cohorts, each consisting of three maniples, or six centuries. At the same time the effective strength of the legion was increased, but during the civil wars the actual number of men varied with the exigencies and possibilities of the case. The normal strength of the cohort was soon raised to 600, making a legion of 6000 men, besides auxiliary troops and cavalry drawn from the barbarian subjects and allies of Rome. In battle the legion was arranged in two lines of five cohorts each; but Cæsar altered the formation to three lines, of four, three, and three cohorts respectively. The chief centurion of the *triarii*, or veterans, known as *primus pilus*, was the ranking officer of the legion, but the responsibility of command was vested in the *legatus legionis*, or lieutenant general, while the six *tribuni militum* remained a sort of honorary staff of young nobles, who used this irresponsible form of military service as a first step in their public career, but were actually rather a nuisance in the army.

When the battle of Actium (31 B.C.) left Octavius in sole control of the Roman world, there were remnants of 50 legions under his command. In 27 B.C. he effected a thorough reorganization of the Roman armies, reducing the total number of legions to 23, to which he added two new ones about 5 B.C. Under the Empire, when whole legions were annihilated in war, they were either newly recruited or the name was dropped. The number of legions, however, gradually increased. Claudius added a new one after his conquest of Britain; Nero created three more; Galba, one; and so on until under Septimius Severus there was a total of 33 legions, which remained the full number until the reign of Diocletian. Under the late

Empire the quota of men to the legion was reduced, but the number of legions was vastly increased. In the fourth century there were more than 175 legions in the field.

The legions of the Empire were distinguished by numbers and names. Examples are Cæsar's famous *Legio X*, *Legio VIII Augusta*, *Legio XII Fulminata* (see **LEGION**, **THE THUNDERING**), *Legio XV Apollinaris*. Titles were sometimes bestowed by the emperors, as special marks of honor, as *pia* (loyal), *vindex* (avenging). Sometimes they were derived from the name of the reigning emperor, as *Severiana*, *Antoniniana*, and often from the place of service, as *Italica*, *Macedonica*. On the legions of the Empire, consult Pfitzner, *Geschichte der römischen Kaiserlegionen* (Leipzig, 1881). On the legion in general, consult: Alfred von Domaszewski, in Mommsen-Marquardt, *Handbuch der römischen Altertümer*, vol. v (2d ed., Leipzig, 1884), the article "Exercitus," in William Smith, *A Dictionary of Greek and Roman Antiquities*, vol. i (3d ed., London, 1890); H. P. Judson, *Cæsar's Army* (Boston, 1894), the article "Exercitus," in Pauly-Wissowa, *Real-Encyclopædie der classischen Altertumswissenschaft*, vol. vi (Stuttgart, 1909); G. L. Cheesman, *The Auxilia of the Roman Imperial Army* (Oxford, 1914). See **ARMIES**, **Rome**.

LEGION, MEDAL OF HONOR. See **MEDAL OF HONOR** **LEGION**.

LEGION, THEBAN (Lat. *Legio Thebana*). A legion of Christians, said to have suffered martyrdom to a man under the Emperor Maximian (286-305). As the story goes there was a legion in the Roman army recruited in the Thebais, the region round Thebes in Egypt, led by Mauritius, and made up entirely of Christians. This legion, being brought to suppress a revolt in Gaul, the Emperor reviewed at Agaunum in Switzerland, and required to swear allegiance in the usual heathen manner. This they refused to do and were massacred to a man. The event, first recorded in writing in the fifth century, made so profound an impression that the name of the place was later changed into Saint-Maurice and a Benedictine monastery built there: the commander became St. Maurice, patron saint of Magdeburg and many other places, his lance became the ensign of the Burgundians, and his spear part of the investiture of the Burgundian kings. The arguments pro and con for this story are given in the *Acta Sanctorum* of the Bollandists under September 22.

LEGION, THE THUNDERING (Lat. *Legio Fulminata*). A legion of the Roman army (See **LEGION**, last paragraph). During the war waged by Marcus Aurelius (q.v.) with the Marcomanni (q.v.) (174 A.D.), his army, according to the narrative, being shut up in a mountainous defile, was reduced to great straits by want of water; but when a body of Christian soldiers prayed to the God of the Christians, not only was rain sent seasonably to relieve their thirst, but this rain was turned upon the enemy in the shape of a fearful thundershower, under cover of which the Romans attacked and utterly routed them. The legion to which these soldiers belonged was thence, according to one of the narrators, called the Thundering Legion. This legend has been the subject of much controversy; it is certain that the last-told circumstance at least is false, as the name Thundering Legion existed as early as the time of Augustus. The legion was so called, apparently, because its shields bore a

device representing the lightning. There would appear, nevertheless, to have been some foundation for the story told of Marcus Aurelius' army. The scene is represented on the column of Antoninus. The event is recorded by the pagan historian Dion Cassius (lxx, 8), who declares that the miracle was wrought by an Egyptian sorcerer, who prevailed on Mercury to aid the Romans, and by Capitolinus and Themistius, the latter of whom ascribes it to the prayers of Aurelius himself. It is appealed to by the nearly contemporary Tertullian, in his *Apology* (c. 5), and is circumstantially related by Eusebius, by Jerome, and Orosius.

LEGION OF HONOR. A French order of merit founded by Napoleon in 1802 and organized two years later. The distinction was conferred for meritorious conduct in military or civil life. The order comprised in the beginning 3665 chevaliers, 450 officers, 300 commanders, 105 grand officers, and a grand master, the last office being vested in Napoleon himself. All members at their initiation were required to pledge their support to the defense of the state and of the liberties achieved by the Revolution. The order experienced many alterations with the successive changes of dynasties in France. Its present constitution dates from the year 1872, when it was reorganized into five classes—chevaliers, officers, commanders, grand officers, and grand crosses. Stipends ranging from 250 francs for a chevalier to 3000 francs in the case of a grand cross are attached to these dignities. In 1892 the order numbered 43,851 members of all classes, and by Law of 1897 the maximum number of additional crosses to be distributed was fixed at 14,320. The emblem of the order is a five-rayed star of white enamel edged with gold, bearing on its obverse the image of the Republic with the inscription *République Française*, and on the reverse two flags with the motto *Honneur et Patrie*. It is surmounted by a wreath of oak and laurel and is suspended from a red ribbon. Originally the cross bore, instead of the emblem of the Republic, the portrait of Napoleon, and was surmounted by an Imperial crown. The order is also conferred on foreigners, and in some cases upon women. See **PLATE OF ORDERS**.

LEG IRONS. See **IRONS**.

LEGISLATION. The declaration, creation, alteration, or repeal of law, by the person or body to whom, by the constitution of a state, the authority has been committed. In primitive society legislation as a source of law has little or no place, custom and usage supplying whatever rules are found to be necessary for the regulation of the common affairs of the community. In such a society the deficiencies of customary law are often supplied by commands issued by the king or chief, sometimes with the assent of his warriors or nobles. In some communities this power became vested in a special class of learned persons, as, e.g., the Druids in Britain and the Brehons in Ireland. The disinclination to innovate upon the customary law, however, and the comparatively few legislative needs of a primitive society made the enactment of new law a rare occurrence. It is doubtful if the great ancient codes contained much new law, for it would have been a rash act for a lawgiver to presume to innovate upon the immemorial customs of the race. But with the growth of a more highly developed society and the advance of civilization new sources of

law made their appearance. Legislation, says Sir Henry Maine, is one of the three agencies by which law is brought into harmony with society, the other two being legal fiction and equity. Bentham, however, using the term in a wider sense, includes both legal fiction and equity under the head of legislation, on the ground that all three processes involve the making of new law, the difference being only one of method. The term is more commonly employed in the special sense of the enactment or amendment of law by the direct action of the sovereign, or of a special organ of the state to which the legislative power is committed. As thus employed, it excludes the process of adjudication, which is, however disguised, one of the most prolific sources of law. Indeed, the complete separation of the two processes is a device of modern society, legislative and judicial functions not being distinguished in the earlier stages of legal development.

Legislation played an important rôle in the legal development of the Greek republics of antiquity, especially in the popular assemblies of Athens and Sparta, but it attained its highest development in the Republican era of Rome. Here its chief organs were the *comitia*, or popular assembly of free citizens, and the Senate, whose decrees (*senatus consulta*) have been the model of succeeding ages. During the Imperial period the legislative function gradually passed out of the hands of the Senate into those of the Emperor, whose judgments and decrees (known variously as constitutions, decrees, rescripts, and mandates) had the force of law without further sanction. The responses of the jurists (*responsa prudentum*), to whom the actual decision of doubtful cases was referred, likewise derived their authority from their confirmation by the Emperor. See *COMITIA*; *LEX*.

During the mediæval period legislation throughout Europe was a function of the prince, sometimes assisted by a council, but never controlled by it. Towards the close of the Middle Ages, however, the rise of Parliament in England led to the withdrawal of a considerable part of the legislative power hitherto exercised by the King, and its assumption by Parliament. (See *LEGISLATURE*.) Elsewhere this power was retained by the princes until the nineteenth century, during the course of which period representative legislative bodies were provided in all those countries which established constitutional systems of government. According to the modern idea of the term, legislation has reference to the formal enactments of those representative bodies especially created for purposes of law-making. But besides the body of legislation emanating from the legislatures there is another important body of law peculiar to modern states which goes by the name of organic or fundamental legislation, and is embodied in the various constitutions of government. This form of legislation differs from the preceding class both as to source and status. In the first place, it emanates usually from constituent assemblies, or, as they are popularly called in America, constitutional conventions; and, secondly, it takes precedence in authority over the body of law which emanates from the legislatures. There is still a third form of lawmaking, commonly known as direct legislation, which results from the application of the principle of the referendum (q.v.). According to this method legislative projects are initiated by the legislature or

by popular petition and submitted directly to the electorate for its approval or disapproval, the validity of the statute being conditioned upon its acceptance by a majority of the voters at the polls. This method of legislation is resorted to quite generally in Switzerland, both in the federal and cantonal governments, as well as in some of the American States. Recently constitutional amendments have been enacted in many States of the Union for the establishment of a system of popular initiative in legislation, such as exists in Switzerland. There are undoubtedly signs of a growing tendency in the United States to accord a more general recognition to this method of legislation as a means of avoiding certain evils of the representative system.

Another, and common, form of legislation is that enacted by municipal and quasi-municipal corporations (cities, counties, townships, etc.). This class of legislation deals with matters chiefly of local concern, but sometimes also of interest to the state at large, and is enacted as a result of special grant from the legislature. In Europe, as a rule, there is a more general grant of legislative power to the localities. In the municipalities the organ of legislation is a representative council, sometimes consisting of a single chamber, sometimes of two, the right of veto usually being given to the mayor. In the counties it is usually a small representative board of commissioners or supervisors; in the townships it is sometimes a popular assembly of the voters, sometimes a smaller body of selectmen, trustees, or commissioners.

Statutory legislation in the United States is from the standpoint of its territorial application classified as *general*, when it applies to the State as a whole, and *special*, when its application is restricted to a particular locality. The abuses which have arisen from the practice of special legislation have recently led to the incorporation of provisions in many State constitutions restricting or prohibiting this form of legislation, but these provisions have not in general proved effective, being evaded by a system of municipal classification. See *MUNICIPALITY*.

Viewed from the standpoint of time of operation, legislation may be either *prospective* or *retroactive*. Retroactive legislation unless for curative purposes is generally regarded with disfavor. When it imposes a criminal liability or tends to impair the obligation of contracts, it is expressly forbidden by the Constitution of the United States. Looked at from its content, legislation may be either *substantive* or *remedial*. Legislation of the former character creates and defines individual rights; of the latter, provides remedies and affords protection.

The methods and processes of legislation roughly fall into two general classes: (1) the cabinet method, and (2) the congressional or committee method. According to the first method, which prevails everywhere in Europe except in Switzerland and Germany, and even to a limited extent in Germany, the great mass of legislation is formulated and initiated by responsible ministers who have seats in the Legislature and may at the same time be members of that body. Whether members or not, the ministers take part in the debates advocating the adoption of the public measures which they wish to have enacted into law, defending

them from the attacks of the opposition and finally resigning when defeated upon any important measure advocated by them. (See CABINET.) According to the second method there is no ministry to formulate and expedite the passage of bills, but each individual member introduces such public or private bills as he chooses and relies upon the aid of his colleagues to secure their passage. This is the method in vogue in the Congress of the United States and in the legislatures of the several States. (See UNITED STATES, *Government*.) Here the chief agencies for expediting legislation are the standing committees of the Congress or Legislature, which play only a subordinate part in the European systems. Apart from this divergence in the method of initiating and expediting the enactment of public measures, there is a substantial consensus among the leading nations of the world as to the general principles of legislative organization and procedure. The constitutions of many States prescribe detailed rules in regard to the form in which projects of legislation shall be cast, their reference to committees, the number of readings through which they shall pass, the keeping of a journal, the recording of the ayes and nays in certain cases, reconsideration of the executive veto, and sometimes such matters as amendments, divisions, discipline, and petitions.

Bibliography. T. E. Holland, *Elements of Jurisprudence* (Oxford, 1882); Sheldon Amos, *Science of Politics* (New York, 1883); Sir H. S. Maine, *Early Law and Custom* (London, 1883); J. W. Burgess, *Political Science and Comparative Constitutional Law* (2 vols, Boston, 1896); A. L. Lowell, *Governments and Parties in Continental Europe* (2 vols, ib., 1896); C. H. McIlwain, *The High Court of Parliament and its Supremacy* (New Haven, 1910); F. J. Stimson, *Popular Law-Making: A Study of the Origin, History, and Present Tendencies of Law-Making by Statute* (New York, 1910); Sir C. P. Ilbert, *Methods of Legislation* (London, 1912); id., *The Mechanics of Law Making* (New York, 1914); W. J. Brown, *Underlying Principles of Legislation* (3d ed, London, 1914). See LEGISLATURE, and consult authorities there cited.

LEGISLATION, LABOR. See LABOR LEGISLATION.

LEGISLATURE. That body of citizens in any state or nation, or part thereof, which is specifically empowered to make, alter, and repeal the laws. In some countries, however, the power of the legislature is more or less restricted by what is known as the constitution, or organic law, of those countries. In ancient systems of government, legislatures, in the modern sense, were practically unknown, though in Athens there was an assembly known as the *Ecclesia*, and in Rome there were various councils, which exercised many of the functions which belong to a modern legislature. In the later Roman Empire the chief source of legislation was the Emperor. In the Germanic tribes there were councils, which all freemen could attend, and these survived for a long time in some cases, as e.g., the Witenagemot (q.v.) among the Anglo-Saxons. Likewise the origin of the Spanish Cortes has been traced to the early Middle Ages, but in general, legislative power ultimately rested during the Middle Ages in the King or the feudal superior. In the Holy Roman Empire, the Imperial Diet possessed a shadow of legislative authority. Of the medie-

val legislatures, the English Parliament is of the most importance, because it was the only one to attain a complete development. It developed out of the Saxon Witenagemot and its successor the Norman Royal Council. Until the thirteenth century, however, it represented only the higher nobility and clergy and possessed little or no independent authority. During the reign of Henry III members from the counties and towns representing the gentry and the burghers were admitted, and in the struggles which followed over the arbitrary exactions of the King, Parliament, as the new body now came to be called, gained increasing power and finally took over from the King the greater part of the legislative authority hitherto exercised by him. It first asserted the right to raise taxes, then to specify the purposes for which they should be expended, then to inquire into the abuses of the administration and impeach the King's responsible ministers for misconduct. Next it asserted the right to share with the King the lawmaking power, and to give its resolutions precedence in authority over royal ordinances, and finally it succeeded in establishing its right to freedom from interference from the royal authority, together with the power of determining the qualifications and elections of its own members.

In the English dominions in America legislatures modeled upon the Parliament of the mother country were early established in every colony. At the time of the adoption of the national Constitution these bodies were bicameral in form in all the States except Georgia and Pennsylvania, the Lower House everywhere being an exclusively popular body. From the first there was a clear-cut distinction between legislative, executive, and judicial powers, and the early constitutions almost without exception expressly required that each set of functions should be exercised by a separate and independent organ of government. The only legislative power left to the Governor was the right to veto bills and recommend the enactment of laws which seemed to him wise and needful.

At the end of the eighteenth century the political reformers on the European continent looked to the institutions of England for their inspiration, so that during the course of the nineteenth century most of the countries of continental Europe adopted written constitutions of government providing for legislative bodies, partially representative at least, and vested with the greater part of the legislative power and often modeled closely upon the English Parliament. In some of the continental states, particularly France, Germany, and Italy, the chief executive still has a large ordinance power which is not only used to fill in the details of legislative acts, but even to supplement them in some cases. Such ordinances, however, are always subject to alteration or repeal by the legislative body. So far as the general principles of legislative organization and procedure are concerned, it may be said that the European and American states have pretty nearly reached a uniform practice. In all the countries of America and Europe where legislative bodies exist, except in some of the Balkan and Central American states, the bicameral system has been adopted as having substantial advantages over the old three-chambered bodies of Estates of the Realm on the one hand, and the single-chambered legislatures on the other. There is also

substantial agreement that the lower houses shall be popular bodies and consequently vested with the exclusive right to initiate financial and revenue measures. With this exception the two houses everywhere enjoy substantial equality of powers in legislation except in Great Britain, where, by a recent Act of Parliament (the Parliament Act, Aug. 18, 1911), the House of Lords was wholly deprived of its power to reject or amend a money bill and, as to all other measures passed by the House of Commons, was restricted to a suspensive veto, it being provided that such measures, if passed by the Commons in three successive sessions, shall become law, notwithstanding their rejection or amendment by the Lords, provided that at least two years have elapsed from the introduction of a bill to its third passage by the House of Commons. It is a general principle that the upper houses shall also be vested with certain administrative or judicial functions, such as the trial of impeachments preferred by the lower houses, the ratification of treaties, the confirmation of appointments to office, the issue of administrative regulations, etc. Similar distinctions in favor of the upper houses exist in the case of the local legislatures of the United States.

The principle of representation upon which the popular chambers rest is essentially the same almost everywhere, namely, apportionment according to the population, often with some regard to geographical division, and choice by district ticket, rather than the apportionment according to classes of voters and choice by general ticket. A striking exception to the principle of apportionment strictly according to population is afforded by the State of Connecticut. The ratio of representation varies greatly. In the Congress of the United States it is one representative to every 212,407 inhabitants, in the German Empire one to every 131,000, in Great Britain and Ireland (on an average) one to every 63,000, in France one to every 100,000, in Mexico one to every 40,000, and in Switzerland one to every 20,000. There is a great diversity with respect to the principles of representation in the upper houses of the legislatures. In general, the representation is of classes or of territorial divisions. In the United States, France, Switzerland, Mexico, and Brazil, the Upper House represents the individual States or the larger administrative units. In all of these except France the principle is equality of representation without respect to size or population of the area represented. In Great Britain, Spain, Portugal, Italy, Austria, and Hungary the principle of class representation is largely employed. Germany has as a part of its legislature a body, known as the Bundesrat, which, though in one sense an upper house, at the same time resembles a meeting of diplomatic representatives of the several states of the Empire.

The source from which the legislatures proceed is now substantially the same everywhere in the case of the lower houses, namely, universal manhood suffrage. To this rule there are exceptions, as in Australia, New Zealand, Finland, Norway, Iceland, and a dozen American States, where women possess the parliamentary or legislative franchise equally with men; in Italy, where a complex system of qualification (education, tax, rent) prevails; in Great Britain, where there is a household lodger franchise;

and in the Netherlands, where the payment of a direct tax is required. So far as the upper houses are concerned, there is considerable variety in the source from which they proceed. In France the Upper House is chosen by indirect election, in the United States (since 1913), Mexico, the Commonwealth of Australia, and Brazil it is chosen by direct election; in Germany and Switzerland it is appointed by the local governments. The British House of Lords consists of peers of the blood royal, English bishops, English peers (hereditary and created by the sovereign), Scotch representative peers (elected for duration of Parliament), and Irish representative peers (elected for life). The constitution of the Austrian Herrenhaus and of the Hungarian Table of Magnates is in the main very similar to that of the British House of Lords. The composition of the Prussian Herrenhaus is somewhat more complex than that of the Austrian; included in its members are representatives of the large cities and of the universities. The Senate in Italy is composed of princes of the royal house and of an unlimited number of peers, nominated by the King for life. The members of the Senate of the Dominion of Canada are appointed for life by the Governor-General. Among the commonwealths of the American Union the source of both houses is popular election.

The qualifications for members of the lower houses do not now differ greatly in the various modern states of the world. In general they are male sex, mature age, sometimes 21 years, although it is 25 in the United States, France, Germany, Spain, and Prussia, and 30 in Italy. citizenship, and residence in the state and sometimes in the district from which the member is chosen. The usual disqualifications are conviction of crime, bankruptcy, pauperism, and the holding of incompatible office at the same time. For eligibility to the upper houses there is usually a higher age qualification, the average being about 30, although it is 35 in Brazil, and 40 in France and Italy. In Europe appointed members of the Upper House are usually required to be selected from certain professional, learned, or noble classes. Among the States of the American Union the qualifications for membership in both Houses are the same, usually mature age and citizenship.

There is substantial agreement throughout the United States and Europe as to the rights and privileges of legislative members. These are the right of each House to judge of the elections and qualifications of its own members; freedom from arrest during the session, except for treason or other high crimes, or unless the member is caught in the act of committing a crime; and freedom of debate without responsibility to any power except the chamber for words spoken or votes cast. There is not yet unanimity of opinion on the question of whether members of the Legislature should receive compensation. In the United States, Mexico, Brazil, and France the practice exists of granting compensation to members of both Houses, and in Great Britain, Switzerland, Belgium, and Prussia to members of the Lower House. In Germany, Italy, and Spain members receive no compensation. In the American commonwealths the practice is to grant a small salary or per diem allowance together with mileage (q.v.).

The tenure of legislative members varies greatly. In the upper chambers of the European

legislatures it is generally for life or long periods of time, although in France it is nine years, and in Switzerland and Germany it depends upon the will of the local governments. As to the lower houses the tenures are usually for short periods of time, ranging from three years in Switzerland to five in Great Britain. In the United States it is six years for the Upper House and two for the Lower; in Mexico it is four for the Upper House and two for the Lower; in Brazil it is nine for the Upper and three for the Lower. Frequent provision is made for a partial renewal of the upper houses. Among the individual States of the American Union the most common provision is a four-year tenure for the Senates and two years for the lower houses. In some States, however, annual elections of members of the Legislature are still held. Relative to the powers of the Legislature over its own assembling, opening, adjournment, prorogation, and dissolution, it may be stated as a general rule that in the American republics and in the commonwealths of the United States this right belongs to the legislatures themselves, subject to certain provisions in the constitutions relative to the times of meeting and the length of the session. Most States have thus restricted the length of the legislative session to periods varying from 40 to 90 days. In the European legislatures, on the other hand, the more common rule is that these are prerogatives of the head of the state. So far as internal discipline, and procedure are concerned, a general rule is that each House shall be left to its own judgment subject to a few limitations prescribed by the constitutions relative to publicity of procedure, the infliction of punishment on refractory members, and the organization of the chamber. There is a substantial agreement that a quorum for the transaction of business should be a majority of the legal number of members. In some states this is regulated by statute, and in others it is made a constitutional principle. This rule, however, is departed from in the case of the British Parliament and the German Bundesrat, in both of which cases the presence of a comparatively small number of members is sufficient to transact business.

So far as the frequency of legislative sessions is concerned, it may be stated as a general rule that national legislatures assemble annually. This is required by the constitutions of the United States and France, while the demands of a complex and increasing civilization make it practically necessary everywhere. In the United States, however, the popular distrust of the State Legislature has led to the general adoption of the system of biennial sessions and in one State (Alabama) of quadrennial sessions. At the present time (1915) only seven States adhere to the old practice of annual sessions.

Bibliography. B. P. Poore, *Charters and Constitutions of the United States* (2 vols., Washington, 1878); H. Marquardsen, *Handbuch des öffentlichen Rechts der Gegenwart* (Freiburg, 1883-94); Gabriel Demombynes, *Constitutions européennes* (2 vols., Paris, 1884); J. W. Burgess, *Political Science and Comparative Constitutional Law* (Boston, 1896); Sir W. R. Anson, *Law and Custom of the Constitution* (3d ed., 3 vols., Oxford, 1907-09); Bryce, *American Commonwealth* (2 vols., New York, 1910); Sir C. P. Ilbert, *The Mechanics of Law Making* (ib., 1914).

See LEGISLATION: SPEAKER; MINISTRY; GOVERNMENT; and articles on the various countries.

LEGISLATIVE MANAGEMENT IN INDUSTRY. See MANAGEMENT, LEGISLATIVE.

LEGITIM, lej'tim (Fr. *légitime*, from Lat. *legitimus*, lawful), or BAIEN'S PART. In Scots law, the legal provision which a child is entitled to out of the movable or personal estate of the deceased father. In Scotland, as formerly by the English common law, a father is not allowed wholly to disinherit his children. If a wife and children survive, the movable estate is divided into three equal parts, one of which is preserved to the children. If only children survive, and not the wife, then half the personal estate is legitim, the other half being called "dead's part" and being devisable by the father at his pleasure. Though a father may in his lifetime, without any check from his children, squander his property, still he is not allowed, by will or otherwise, to make gifts so as to lessen the fund to which the children are entitled. The legitim is claimable by all the children who survive the father, but not by the issue of those children who have predeceased. It is immaterial what the age of the child may be and whether married or not. Children claiming legitim must, however, give credit for any provision or advance made by the father out of his movable estate in his lifetime. All the children, though of different marriages, share equally in the legitim. The principle of the legitim does not now exist at the common law, but it obtains in Louisiana and in all the modern States whose legal systems are derived from that of the civil law. See INFAMOUS TESTAMENT.

LEGITIMACY. In law, the status of a child who is born in lawful wedlock. Any child born during wedlock is presumed to be legitimate, but this presumption may be rebutted by positive proof that the husband and wife had not cohabited for a time which would completely negative any possibility of the former being the father of the child. The old common-law rule was that the child was conclusively presumed to be legitimate unless the husband was "beyond the seas" for over nine months previous to its birth, but that rule has been modified as above stated. At common law the subsequent marriage of the parents did not have the effect of legitimizing children previously born to them, and such is still the law in England; but in civil-law countries (including Scotland, Quebec, and Louisiana), and now by statute in most of the United States, a child born out of wedlock is legitimized by the subsequent marriage of its parents, in which case it has the same status in law as a child born in wedlock.

As the only legal disabilities under which an illegitimate person rests are his inability to inherit land and, as next of kin, to administer the estate of a deceased parent or to share therein under statutes of distribution, the question of one's legitimacy is rarely raised, except when he asserts a claim to real or personal estate under such circumstances or when some one claims under or through him. Since 1858, in England, by virtue of the Legitimacy Declaration Act (21 and 22 Vict., c. 93), any natural-born subject, whose domicile is England or Ireland, or who claims any real or personal estate situate in England, may by direct proceedings, instituted by him for that purpose in the Divorce and Matrimonial Court, have the

question of his legitimacy tried and judicially determined. In the United States the old practice still generally obtains. See BASTARD; HEIR; ILLEGITIMACY; LEGITIMATION.

LEGITIMATION (from ML. *legitimare*, to make legitimate, from Lat. *legitimus*, lawful). The act of conferring the status of legitimacy on a person born a bastard. This may be effected by adoption, by act of parliament or legislature, or by the subsequent marriage of the father and mother of the illegitimate offspring, called legitimation *per subsequens matrimonium*. This effect, however, can only be produced provided at the time of the birth the parents might have been married, or there was no obstacle to their then marrying, if so inclined, as, e.g., if they were both unmarried, and there was no impediment. Sometimes it has happened that the father, A, or mother, B, after the child's birth, marries a third person and has children, and after the dissolution of the marriage A and B marry. In this perplexing case the courts have held that the intervening marriage with a third party does not prevent the bastard child, born before that event, from being legitimated by the subsequent marriage of A and B. But it has not been settled what are the mutual rights of the children of the two marriages in such circumstances, though it appears that the legitimate-born children cannot be displaced by the legitimated bastard. The doctrine of legitimation *per subsequens matrimonium* obtains in Scotland and in the legal systems of the Continent which are derived from the civil law, but is not recognized in England or Ireland, having been solemnly repudiated by the famous statute of Merton, and the maxim prevails there, "Once a bastard, always a bastard." This harsh rule of the common law still prevails in a few of the United States, but in most the civil-law rule has been adopted. The rule is the same where the parents were not really married, though they both bona fide believed themselves to be married. Consult "Legitimation by Subsequent Marriage," in *Journal of Society of Comparative Legislation*, vol. vi (N. S., London, 1906).

LEGITIMISTS (Fr. *légitimiste*, from Lat. *legitimus*, legal, from *lex*, law), THE. In France, after 1830, the party that upheld the claims of the elder line of Bourbons against the younger or Orleanist line. Charles X, who was deposed in 1830, belonged to the Bourbons, while Louis Philippe, who succeeded him, belonged to the house of Orléans. The death of the Count de Chambord, the last of the Bourbon line, in 1883, ended the dispute by leaving the Count de Paris, grandson of Louis Philippe, sole heir to the claims of both branches of the Bourbon family. The name to-day is applied to a believer in hereditary monarchy as opposed to parliamentary rule.

LEGLER, leg'ler, HENRY EDUARD (1861-). An American librarian. Born at Palermo, Italy, he was educated in Switzerland and in the United States. He served as a member of the Wisconsin State Assembly in 1889, as secretary of the Milwaukee, Wis., School Board from 1890 to 1904, and as secretary of the Wisconsin Library Commission in 1904-09. In 1909 he became librarian of the Chicago Public Library, and in 1912-13 he was president of the American Library Association. He is author of *Chevalier Henry de Tonty* (1896); *A Moses of*

the Mormons (1897); *Leading Events of Wisconsin History* (1897); *James Gates Percival* (1901); *Early Wisconsin Imprints* (1903); *Poe's Raven: Its Origin and Genesis* (1907); *Of Much Love and Some Knowledge of Books* (1912).

LEGNAGO, là-nyà'gò. A city in the Province of Verona, Italy, 33 miles by rail southeast of the city of Verona, on the Adige (Map: Italy, F 2). It has a technical school, a city library, and two theatres. The country is fertile though swampy, and Legnago is an important market for rice and other grain, wine, potatoes, and flax. In 1796 it was captured by the French, and the old fortifications were razed under Napoleon in 1801. In 1815 the Austrians, to defend the passage of the Adige, re fortified Legnago, making it one of the fortresses of the famous Quadrilateral. Pop. (commune), 1881, 14,358, 1901, 14,529; 1906, 17,000.

LEGNANO, là-nyà'nò. A town 16 miles northwest of Milan, Italy, on the river Olona. There are cotton and silk factories. Pop., 1901 (commune), 12,002; 1911, 24,364. It is famous for the victory of Milan and the allied Lombard cities over the Emperor Frederick Barbarossa (q.v.) in 1176. In the year 1876, the seven-hundredth anniversary of the battle, a monument was erected on the battlefield.

LE GOFFIC, le gô'fèk', CHARLES HENRI (1863-). A Breton poet, novelist, and critic, born at Lannion. The traditions and customs of Brittany have been depicted by him in a striking manner, on much the same lines as his contemporary Le Braz (q.v.). He became a Chevalier of the Legion of Honor and was three times a laureate of the French Academy. His literary career opened with a volume of verse, *Amour breton* (1889), followed by *Le pardon de la reine Anne* (1892). In 1913 his *Poésies complètes* began to appear. His other works include: *Le crucifié de Kérault* (1892); *Passé l'amour* (1895); *Le pays* (1897); *Sur la côte* (1897); *Morgane* (1898); *L'Erreur de Florence* (1904); *Les bonnets rouges* (1906); *L'Âme bretonne* (1902-08); *Passions celtiques* (1908); *La double confession* (1909); *Fêtes et coutumes populaires* (1911). Le Goffic's critical writing is found in *Nouveau traité de versification française* (1890, 5th ed., 1910), with E. Thieulin; and *Les romans d'aujourd'hui* (1890). In collaboration with Gabriel Vicaire he wrote the drama *Le sortilège* (1900).

LEGOUIS, le-gôo'è', EMILE (1861-). A French literary critic. He was born at Honfleur (Calvados), was educated at the universities of Caen and Paris, and after teaching in various provincial institutions, including 19 years as lecturer and professor at the University of Lyons, he was appointed to the chair of English language and literature at the Sorbonne (1904). In 1912-13 he visited America as exchange professor at Harvard and while here lectured at various other universities. His works include: *Le général Michel Beaupuy* (1891); *La jeunesse de William Wordsworth* (1896); *Pages choisies des grands écrivains, Shakespeare* (1899); *Morceaux choisis de littérature anglaise* (1905); edition of the *Jocelyn* of Lamartine and *Pages choisies d'Angellier* (both 1906); *Dans les sentiers de la renaissance anglaise* (1907); introduction to the French edition of the *Canterbury Tales* (1908); *Chaucer*, in the series "Écrivains étrangers" (1910); *Défense de la poésie française à l'usage des lec-*

teurs anglais (1912); "William Wordsworth," in the *Cambridge History of English Literature*, vol. xii (New York, 1914).

LEGOUVÉ, le-goo'vâ', ERNEST (1807-1903). A French dramatist, essayist, and academician, son of the poet Jean Baptiste Legouvé. His mother died in 1810, and his father soon had to be put in a lunatic asylum, but the orphan had plenty of money and was well educated. In 1829 he won an academic prize for a poem on the discovery of printing; but he first made his mark 20 years later (1849) by the drama *Adrienne Lecouvreur*, written in collaboration with Scribe (q.v.), as were also *Les contes de la reine de Navarre* (1850), *Bataille des dames* (1851), *Les doigts de fée* (1858). His dramas written independently of Scribe are insignificant, save for *Médée*, rather than play which Rachel paid 5000 francs, though Ristori achieved success with it in an Italian translation. Legouvé's dramatic works were collected (1887-90). He wrote also on education, on the social position of women, and on *L'Art de la lecture* (1877, 1881), in which he was an adept. In 1881 Legouvé was made director of studies in the normal school for girls at Sèvres and in 1887 a Commander in the Legion of Honor. Towards the end of his life Legouvé was known for his studies on the character and needs of women and children in France. *La femme en France au XIX^{ème} siècle* (1864) was reissued, much enlarged, in 1878. *Messieurs les enfants* appeared in 1868; then came his *Conférences parisiennes* (1872); *Nos filles et nos fils* (1877); and *Une éducation de jeune fille* (1884)—all very influential in changing French methods of education. In 1886-87 Legouvé published his autobiography, *Soixante ans de souvenirs*. He was always fond of physical training, which he urged as important to France, and was himself a skillful fencer and pistol shot. He died March 14, 1903.

LEGOUVÉ, JEAN BAPTISTE (1764-1812). A French poet and dramatist, born in Paris. His first play, *La mort d'Abel*, was produced in 1792 and was followed by *Epicharis* (1793), *Quintus Fabius* (1795), *Étécle* (1799), and *La mort de Henri IV* (1806), the only play he wrote which was well received. In general his dramatic works lack movement and interest. His poem *Le mérite des femmes* (1801) was very popular; it went rapidly through 40 editions. Legouvé was elected to the Institute in 1798.

LEGRAIN, le-grân', GEORGES ALBERT (1865-). A French Egyptologist, born in Paris. There he received his education, studying in the Ecole des Beaux-Arts under Gérôme and in the Collège de France under Maspero. In 1892 he became a member of the Institut Français d'Archéologie Orientale at Cairo, and of the museum of that city he was appointed Inspecteur-dessinateur in 1894. In 1897 Legrain became a member of the Institut Egyptien; in 1908 he was made a Chevalier of the Legion of Honor. While working on the reconstruction of the great temple of Ammon at Karnak, of which he had been placed in charge in 1895, he had the good fortune in 1904 to discover 800 statues of stone and 17,000 of bronze which had been buried in one place. Legrain's numerous publications include: *Le livre des transformations*; *Catalogue du musée de Cairo*; *Repertoire général de logue et onomastique du musée de Cairo*; *Les temples de Karnak*; *Louqsor*; *Légendes et*

chansons populaires; *La statuette funéraire de Pathmos* (1904); *Notes prises à Karnak* (1905); *Comment doit-on établir une généalogie égyptienne* (1906); *La grande stèle de Toutankhamanou à Karnak* (1907); *Sur une stèle de Senousrit IV* (1908).

LEGRAND, le-grân', LOUIS DÉSIRÉ (1842-). A French legal scholar and diplomat, born at Valenciennes. From 1882 to 1895 he was Minister Plenipotentiary at The Hague. He became a Councillor of State and an Officer of the Legion of Honor and was decorated by Holland. He wrote: *Du divorce et de la séparation de corps* (1865); *Sénac de Meilhan et l'indépendance de Hainaut et du Cambrésis* (1868); *Le mariage et les mœurs en France* (1879), crowned by the French Academy and the Academy of Moral and Political Science; *La révolution française en Hollande: La république batave* (1895); *L'Idée de patrie* (1897); *Précis de procédure civile usuelle et pratique* (1897; new enlarged ed., 1904).

LEGRAND DU SAULLE, le-grân' du sôl, HENRI (1830-86). A French alienist. He was born at Dijon, studied medicine there, and was interne at Rouen and at Charenton, was associate editor of the *Gazette des Hôpitaux* (1854-62), and in 1862 became doctor of medicine with a thesis *De la monomanie incendiaire*. He was an associate of Lasègne at the prefecture of police, Paris; was physician at the Salpêtrière (1877) and chief physician of the special infirmary for the insane at the prefecture of police, Paris (1883). He was long editor of the *Annales médico-psychologiques*. His principal works were: *La folie devant les tribunaux* (1864), an essay on *Le délire des persécutions* (1871); *Etude médico-légale sur les épileptiques* (1877); *Traité de médecine légale* (2d ed., 1885).

LEGRENZI, là-grên'tsé, GIOVANNI (c.1625-90). An Italian composer, born at Clusone, near Bergamo. After having studied under Pallavicino he became organist at Bergamo and, as *maestro di cappella* to the Duke of Ferrara, produced his first opera, *Achille in Sciro*, in 1663. The next year he went to Venice, where he was elected director of the Conservatory de' Mendicanti (1672), and in 1685 became *maestro di cappella* at Saint Mark's. In the latter capacity he enlarged the orchestra and introduced a number of innovations. He was one of the first to write trios for two violins and violoncello, and his operas (18 in all) are marked by a freer use of melody and a more coherent instrumentation than had been common before his time. In addition to his operas and instrumental compositions, he wrote considerable sacred music. He died in Venice.

LEGROS, le-grô', ALPHONSE (1837-1911). A French painter, etcher, and sculptor. He was born at Dijon, studied at the School of Fine Arts there and in Paris under Lecoq de Boisbaudran. He first exhibited a portrait of his father (1857, Tours Gallery), which caused him to be classed among the so-called Realists. Two years afterward his "Angelus," owned by Seymour Haden, excited further attention, and in 1861 his "Ex Voto" (Dijon Museum) aroused a storm of criticism. In 1863 he removed to London, where he became professor of etching in South Kensington schools and in 1876 was appointed Slade professor of fine arts at University College, London, to succeed E. J. Poynter. By his teaching and lofty example he

strongly influenced English art. His earlier period is marked by a primitive but picturesque realism; his later works are more simple and dignified, and in spirit nearly approach the old masters. Legros was extraordinarily versatile and prolific. His etchings are vigorously executed, with much restrained force, dramatic power, and grotesque humor. His innumerable pen and pencil drawings and his etchings and his medal work are widely known, and in his later years he gained fame as a sculptor. His subjects, beside portraits, are largely religious, or else illustrate the life of beggars, vagabonds, and the common people. His painting "Public Penance" (1868) is in the Luxembourg, which also possesses "The Dead Christ" (1868), a landscape, and the portrait of Gambetta. Among other important examples are: "Woman Praying" (1888, Tate Gallery, London); "Young Woman Walking beside a River" (1889, Alençon Gallery); "On the Edge of the Woods" (Metropolitan Museum, New York). Among Legros's best-known sculptures are "The Mask of Miss Swainson," in the South Kensington Museum, and the monumental fountain at Welbeck Abbey. His etchings include "The Triumph of Death," a remarkable allegorical series; "The Death of St. Francis"; "Procession through the Vaults of Medard," and "The Dying Vagabond." His portraits, such as those of Burne-Jones, Huxley, and Browning, are also notable.

LEGROS, PIERRE The name of two French sculptors.—**PIERRE THE ELDER** (1629-1714) was born at Chartres and studied in Paris under Sarrazin. He was chosen member of the French Academy in 1666 and appointed professor in 1702. Many of his statues and decorative works, which he modeled for Versailles, still exist. They are in the exaggerated baroque style of the period.

His son and pupil **PIERRE** (1666-1719) was born in Paris. He also studied at Rome, where he resided for many years and where most of his works are to be found. There are large religious groups by him in the Turin Cathedral, and in the church of St. John Lateran and St. Peter's in Rome, and several busts in the Louvre. They show artistic talent, but very little taste.

LEGUÍA, Iá-goo'yá, AUGUSTO B. (1863-). A Peruvian statesman, born in Lambayeque. He was educated in Valparaíso, Chile, and upon his return entered business in Lima. He served with distinction as a private in the Chilean-Peruvian War. After the war, he entered employment of the New York Life Insurance Company and soon became the general manager for Peru, Ecuador, and Bolivia. Later he organized and directed La Sud Americana Insurance Company in Peru and managed the British Sugar Company, Ltd. In 1903 he entered political life, accepting the Ministry of Finance, in which he introduced many fiscal improvements, especially that of the collection of the taxes through a private corporation. His measures greatly increased the public revenues. In 1908 he was elected President of Peru. Although much criticised by his own as well as by the opposition party, he maintained a firm control of the situation, governing with justice. His administration was progressive and peaceful. Education was encouraged, boundary disputes with Brazil and Bolivia were settled, the national defense was improved, and wireless communication was established between Lima

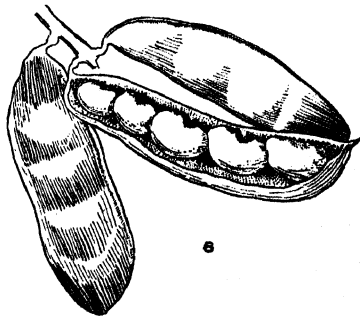
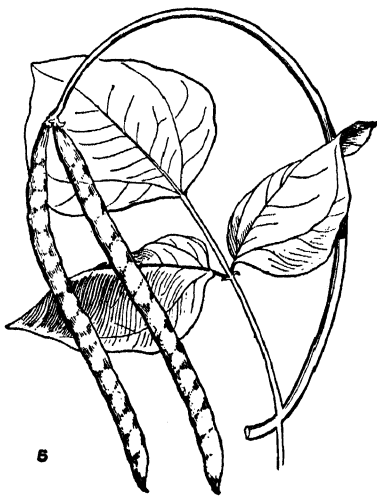
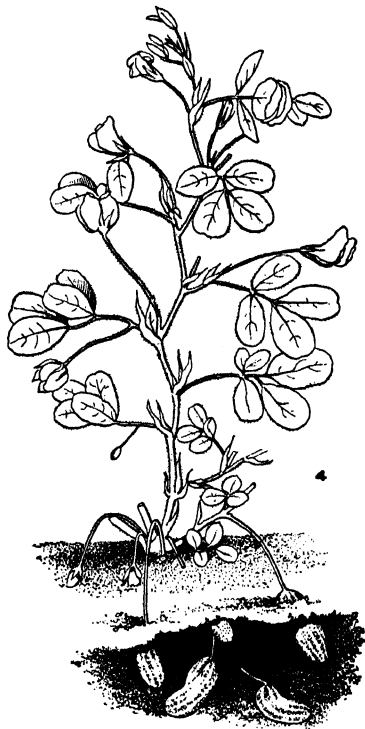
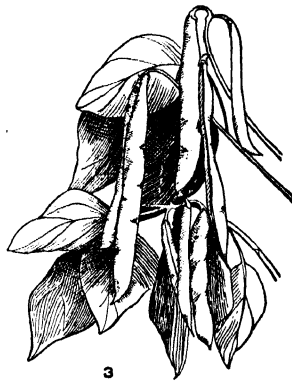
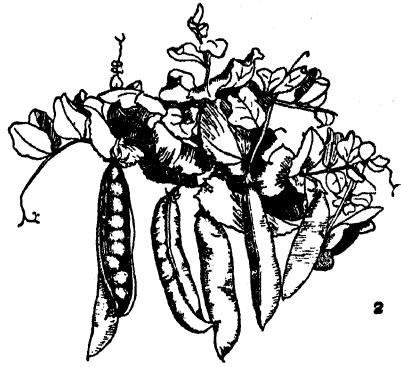
and Iquitos. At the end of his term in 1912 he went to London, where he thereafter resided.

LEGUME, lē'ūm or lē-gūm' (Fr. *légume*, from Lat. *legumen*, bean, from *legere*, to gather). A dry, dehiscent fruit, consisting of one carpel, and dehiscing (opening) by splitting down both sides, as in the pea, bean, etc. It is characteristic of the Leguminosæ, or pulse family, and is commonly spoken of simply as a pod. See **FRUIT**.

LEGU'MIN (from Lat. *legumen*, bean). A vegetable protein of the globulin group, found mainly in the seeds of many plants, including the leguminous plants, such as peas, beans, and lentils. Its exact nature is not known. Ritt-hausen found legumin from peas and field beans to contain the elements in the following proportions: carbon, 51.5 per cent; hydrogen, 7 per cent; nitrogen, 17.1 per cent; sulphur, 0.4 per cent; and oxygen, 24 per cent. Osborne found: carbon, 52.1 per cent; hydrogen, 7 per cent; nitrogen, 18 per cent; sulphur, 0.4 per cent; and oxygen, 22.5 per cent. Legumin may best be prepared by freeing finely ground peas of fat with the aid of naphtha, then extracting with a 10 to 20 per cent aqueous solution of common salt; the extract is filtered, precipitated with ammonium sulphate, the precipitate is again dissolved in a 10 per cent solution of common salt, and the salt is removed from the solution by dialysis, whereupon the legumin separates out almost pure, the final purification is effected by washing with water and alcohol. Legumin is insoluble in water, but soluble in very weak acids and alkalies, it is not coagulated by heat. It resembles the casein of mammalian milk, with which it was considered identical by Liebig and others, and was therefore called vegetable casein. It contains less carbon and more nitrogen, however, than true casein. Upon treatment with sulphuric acid, legumin gives leucine, tyrosine, and glutamic and aspartic acids. It is closely related to conglutin, a substance found in the seeds of cereals. Consult Osborne, *The Vegetable Proteins* (New York, 1909).

LEGU'MINOSÆ (Neo-Lat. nom. pl., from Lat. *legumen*, bean). A great family of dicotyledonous plants, containing about 12,000 species. It is far the largest family of the Archichlamydeæ, and with one exception (Compositæ) the largest family of angiosperms. In fact, it comprises approximately one-tenth of all angiosperms. The outstanding feature of the family is the legume, which is a pod developed by a single carpel and characterized by the fact that it splits into two pieces or valves, as in the case of peas and beans. The Leguminosæ overlap the Rosacæ (q.v.), the *Mimosa* tribe having many of the features of the latter family. The outlying features of the Rosacæ are regular flowers and several carpels, while the outlying features of the Leguminosæ are irregular flowers and a single carpel. In the *Mimosa* tribe of Leguminosæ, however, there is a combination of the regular flowers of the Rosacæ and the single carpel of Leguminosæ. This indicates that the legume, rather than the irregularity of the flowers, determines a member of Leguminosæ. The irregularity of the family is shown by the corolla and is very characteristic, consisting in what is called a papilionaceous (butterfly-like) corolla. The common sweet pea suggests the type of irregularity. The uppermost petal, called the standard, is the largest,

USEFUL LEGUMES



1. VETCH (*Vicia villosa*).
2. GARDEN PEA (*Pisum sativum*).
3. STRING BEAN (*Phaseolus vulgaris*).

4. PEANUT (*Arachis hypogaea*).
5. COWPEA (*Vigna catjang*).
6. LIMA BEAN (*Phaseolus lunatus*).

and encloses the others in the bud; the two lateral petals form the so-called wings; while the two lower petals unite to form the characteristic keel, which usually incloses the stamens and pistil. The stamens are quite characteristic, usually being ten in number, and united into one set or two sets (9 and 1). Occasionally they are free from one another, and rarely they are five in number. The three tribes of the family are very well marked.

1. *Papilionoideæ*. This tribe, much the largest, is characterized by its distinctly papilionaceous flowers. It includes a host of familiar forms, the most representative in American flora being *Baptisia* (false indigo), *Crotalaria* (rattlebox), *Lupinus* (lupin), *Trifolium* (clover), *Psoralea*, *Amorpha*, *Petalostemum* (prairie clover), *Robinia* (locust), *Astragalus* (milk vetch), *Desmodium* (tick trefoil), *Lespedeza* (bush clover), *Vicia* (vetch), and *Lathyrus* (everlasting pea). Among the more common and best-known forms naturalized from Europe, in addition to peas (*Pisum*) and beans (*Phaseolus*), are *Genista* (whin), *Cytisus* (broom), *Ulex* (gorse), *Melilotus* (sweet clover), and *Medicago* (alfalfa).

2. *Casalpinioidæ*. This tribe is characterized by its regular or imperfectly papilionaceous corolla, presenting a condition distinctly intermediate between the two other tribes. Even when the corolla is imperfectly papilionaceous, it can be distinguished from the preceding tribe by the fact that the upper petal is inclosed by the others in the bud, rather than the reverse. The common representatives are *Gymnocladus* (Kentucky coffee tree), *Gleditsia* (honey locust), *Cassia* (senna), and *Cercis* (redbud).

3. *Mimosoideæ*. This tribe is characterized by its regular corolla, which is valvate in the bud, that is, the petals do not overlap one another. It is the group of sensitive plants, chiefly characteristic of the southwestern arid regions of North America. The representative genera are *Mimosa* and *Acacia*.

A very notable feature of the Leguminosæ is the presence of root tubercles which are inhabited by nitrogen-fixing bacteria. Certain soil bacteria enter the young root hairs, grow and multiply, and work gradually into the cortex, where as they increase they stimulate the rootlet to multiply and enlarge the cortical cells, so that a local swelling, or tubercle, is formed. The largest of these scarcely exceeds the size of a hazelnut, and most are smaller than a pea, or even a grain of wheat. The bacteria inhabiting these tubercles can use the free nitrogen in their manufacture of protein. By means of their favorable situation, many of the bacteria become excessively enlarged. The leguminous host sooner or later gets the better of the parasites, and consumes these fat bacteria (bacteroids). In consequence of this peculiar relation between leguminous plants and nitrogen-fixing bacteria, leguminous crops, as clover and alfalfa, can be grown in soils poor in nitrates, and if the crop is plowed under, the soil is enriched in nitrogen at the expense of the air. For this reason leguminous plants are the most useful in the so-called rotation of crops.

LEHAR, lē'hār, FRANZ (1870-). An Austrian composer, born at Komorn (Hungary). Having completed his musical education at the Prague Conservatory, he began his career as concert master of the Elberfeld Opera. From 1890 to 1902 he was bandmaster of various

Austrian regiments. He then became conductor of the Theater an der Wien. The lukewarm reception of his first serious opera, *Kukushka* (1896), caused him to withdraw from the field of composition for some years. Meanwhile he discovered his truly remarkable talent for light opera, and his first attempts in this field, *Wiener Frauen* and *Der Rastelbinder*, both produced in 1902, proved emphatic successes. These were followed two years later by the equally successful *Die Juaheirat* and *Der Gottergatte*. On Dec. 30, 1905, he scored his greatest success, when *Die lustige Witwe* (The Merry Widow) had its initial performance in Vienna. Immediately the work made the rounds of all the stages throughout the civilized world, arousing the wildest enthusiasm everywhere and incidentally making the composer a millionaire. This was followed by other successful works, *Mitslav der Moderne* (1906), *Der Mann mit den drei Frauen* (1908), *Das Fürstenkind* and *Der Graf von Luxemburg* (1909), *Zigeunerliebe* (1910), *Die ideale Frau* (1912), *Endlich allein* and *Le roi des Montagnes* (1914). In the early part (1914-15) of the European War he was taken prisoner by the Russians.

LEHI. A city in Utah Co., Utah, about 30 miles south of Salt Lake City, on the Denver and Rio Grande and the San Pedro, Los Angeles, and Salt Lake railroads, and on two canals (Map: Utah, C 2). The surrounding region is adapted to irrigated farming, fruit growing, and sugar raising, and there are roller mills, a canning factory, and a large sugar refinery. The water works are owned by the city. Pop., 1900, 2719; 1910, 2964.

LEHIGH, lē'hi. A river of eastern Pennsylvania. It rises in the southwestern part of Pike County, flows southwest to White Haven in Luzerne County, then southeast to Allentown, Lehigh County, where it turns northeast and enters the Delaware at Easton, after a course of about 120 miles (Map: Pennsylvania, L 6). It is followed for the greater part of its course by the Lehigh Valley Railroad and passes through a region rich in anthracite coal and iron, for which it is an important outlet. By means of locks and dams it has been opened for slack-water navigation 84 miles from its mouth.

LEHIGHTON, lē'ht-tūn. A borough in Carbon Co., Pa., 86 miles by rail north by west of Philadelphia, on the Lehigh River, on the Lehigh Coal and Navigation Canal, and on the Lehigh Valley and the Central of New Jersey railroads (Map: Pennsylvania, K 5). Among the important industries are silk and lace mills, a meat-packing house, shirt factory, automatic-press works, car shops, stoneworks, foundries, etc. The fair grounds of the County Industrial Society are here, and there are two beautiful parks. Pop., 1900, 4629; 1910, 5316.

LEHIGH (lē'hi) **UNIVERSITY**. An unsectarian institution of higher learning at South Bethlehem, Pa., founded in 1865 by Judge Ass Packer (q.v.), of Mauch Chunk, with a gift of \$500,000 and 115 acres of land, and incorporated in 1866. By his will Judge Packer, who died in 1879, endowed the university with \$1,500,000 and the library with \$500,000. The object of Judge Packer was primarily to afford the young men of the Lehigh Valley a complete technical education for the professions represented in the development of the peculiar resources of the region. The university is organized in two departments: the department of

arts and sciences, comprising a classical course and business administration and scientific courses; and the department of technology, with highly developed courses in civil, mechanical, metallurgical, mining, and electrical and chemical engineering, electrometallurgy, and chemistry, leading to the corresponding engineering degrees. Graduate courses are offered in both departments, conferring the master's degree in art and science, and attendance at the summer schools forms part of the required work in the engineering courses. The college buildings, 17 in number, include Packer Hall, the Packer Memorial Church, well-equipped laboratories for chemistry and metallurgy, physics and electricity and steam engineering, the Sayre Astronomical Observatory, the John Fritz Engineering and Testing Laboratory, the Coke Mining Laboratory, a modern gymnasium, and the "Pittsburgh" (the gift of Charles L. Taylor, of Pittsburgh, Pa.), a large concrete stadium, Brown Memorial Hall (the student clubhouse), student commons or dining hall, and two dormitory buildings. The productive funds in 1913-14 amounted to \$1,314,000 and the annual income to \$260,638. The university had in 1914 an attendance of 672 students, a faculty of 75 instructors, and a library of 133,000 volumes. The president in 1914 was Henry S. Drinker, LL.D.

LEHMANN, lä'mán, ALFRED GEORG LUDVIG (1858-). A Danish psychologist and psychophysicist, born in Copenhagen. He took the degree of Ph.D. in 1884 at the University of Copenhagen, where, after study in Leipzig under W. Wundt, he became (1890) docent and (1910) professor, and where he founded a psychophysical laboratory. He wrote: *Hovedlove for det menneskelige Følelsesliv* (1892), for which the Society of the Sciences awarded him a gold medal; *Overtro og Trolddom* (4 vols., 1893-96; trans. into German); his main work, *De sjælelige Tilstandes legemlige Ytringer* (3 vols., 1898; Ger. trans., 1899-1905; continuation in German, *Elemente der Psychodynamik*); *Psychologische Methodik* (1905); *Grundzüge der Psychophysikologie* (1912); *Pædagogisk Psychologi* (1913).

LEHMANN, FREDERICK WILLIAM (1853-). An American lawyer. He was born in Prussia, graduated from Tabor College, Iowa, in 1873, and was admitted to the bar in 1873. He then practiced law at Nebraska City, Neb., until 1876, then at Des Moines, Iowa, until 1890, and thereafter at St. Louis, Mo., where he was a member of the firms of Boyle, Priest, and Lehmann (1895-1905) and Lehmann and Lehmann (1905-10). He was Solicitor-General of the United States in 1910-12 and represented the government at the Mexican Peace Conference at Niagara Falls, N. Y., in 1914. He served as president of the American Bar Association in 1908-09.

LEHMANN, lä'mán', HENRI (1814-82). A French historical and portrait painter, born at Kiel, Schleswig. He was a pupil of his father, Leo Lehmann, and of Ingres in Paris, where he opened a studio in 1847, after having become naturalized. He received many medals and was a member of the Institute and professor at the Ecole des Beaux-Arts. His work is of unequal merit. Much is dry and academic, but the best is pure in line and graceful in form. Among the best of his canvases are: "Jephtha's Daughter" (1836); "Grief of the Oceanides" (1850); "Prometheus"; "Erigone's Dream";

"Venus Anadyomene"; "Adoration of Magi and Shepherds" (1855, Rheims Museum); "Marriage of Tobias" (1866); mural paintings in the chapels of the church of St. Merry, on the ceiling of the Great Hall in the Palais de Justice, and in the Throne Hall, Luxembourg Palace. He painted many well-characterized portraits of celebrated contemporaries—Liszt, Ingres, and Edmond About, among others.

LEHMANN, lä'mán, JOHANNES EDVARD (1862-). A Danish theologian and Church historian, born in Copenhagen. In 1890 he won the gold medal of the University of Copenhagen, where, after studies in Lund, Germany, Holland, England, and Paris, he took the degree of Ph.D. (1896), and where he became docent in 1900. In 1910 he was appointed professor of religious history and religious philosophy at the University of Berlin and was made honorary doctor of theology by Leyden. In 1913 he became professor at Lund. He exerted great influence through his lectures and many books, the most important of which are: *Zarathustra* (2 vols., 1899-1902), treating of the old faith of the Persians; *Mystik i Hedenskab og Kristendom* (1904; Ger. trans., 1907); *Om Bibelen at læse og lære* (1906); *Buddha* (1907); *Opdragelse til Arbejde* (1910; Ger. trans., 1913); *Almuvel og Eventyr* (1910); *Teatrbuch zur Religionsgeschichte* (1912); *Hvorledes skal jeg undervise?* (1912); *Barnelærdom og Ynglingsliv* (1913). He edited and partly wrote P. D. C. de la Saussaye's *Lehrbuch der Religionsgeschichte* (4th ed., 1912), the most important book on the subject.

LEHMANN, lä'mán, KARL BERNHARD (1858-). A German physician. He was born in Zurich, was educated at the University of Zurich, and in 1881 became assistant in the physiological institute there. In 1883 he took a similar post in Munich and in 1887 went to Würzburg as assistant professor of hygiene, taking charge of the hygienic institute. In 1894 he became professor. Among his hygienic studies are a large number (beginning 1886) on gases, on the metals (copper, zinc, tin, nickel, chromates), on flour and bread (1894-1904), on cotton (1907), on tobacco and its use (1909-13), and on coffee (1912). He also published *Methode praktischer Hygiene* (2d ed., 1901; Eng. version by Crookes, 1893), and *Atlas und Grundriss der Bakteriologie* (1897; 5th ed., 1911), with R. O. Neumann.

LEHMANN, LILLI (1848-). An eminent German dramatic soprano, born in Würzburg. Her first lessons were from her mother, who was a harp player and prima donna under Spohr at Cassel. After singing small parts on the stage she made her début in Berlin as a light soprano in Meyerbeer's *Das Feldlager in Schlesien* in 1870 and became so successful that she was appointed Imperial chamber singer in 1876, in which year she sang the bird music in *Siegfried* and took the part of one of the Rhine daughters in the Nibelungen trilogy at Bayreuth. She sang in London in 1884 and came to New York, where she was engaged as principal soprano at the Metropolitan Opera House from 1885 to 1890. It was there that, together with Fischer, Alvary, Brandt, and Seidl, she helped accomplish the final triumph of Wagner's music. After her return to Germany she appeared as a Lieder singer, proving herself the equal of the greatest artists in that field also. Occasionally she appeared as guest on the oper-

atic stage; but for long the German opera houses were closed to her because she had remained in America beyond the leave granted her by the Berlin Opera. At last, however, through the personal intervention of the Emperor, the ban was removed. In 1901 she not only organized but also managed the famous Mozart Festivals in Salzburg. In 1888 she was married to the tenor Paul Kalisch. Her voice, of superb quality and volume, gained for her the reputation of being not only one of the greatest Wagnerian singers of her day, but also an ideal interpreter of Mozart. She was unsurpassed in the rôles of Brünhilde and Isolde. Consult: L. Andro, *Lilli Lehmann* (Berlin, 1907); Lilli Lehmann, *Mein Weg* (Leipzig, 1913; Eng. trans. by Alice B. Seligmann, *My Path through Life*, New York, 1914).

LEHMANN, lä'män, LIZA (Mrs. HERBERT BEDFORD) (1862-). An English concert vocalist and composer, born in London. Her father, Rudolph Lehmann, was a well-known artist, and her mother (daughter of Robert Chambers, cofounder of *Chambers's Journal*) was a composer, writing under the pseudonym of A. L. Liza Lehmann, studied voice culture under Randegger (London) and Raunkilde (Rome), and composition under Freudenberg (Wiesbaden) and Hamish MacCunn (London). Her début as a vocalist was at the London Monday Popular Concerts on Nov. 23, 1885; she afterward met with remarkable success throughout Great Britain and Germany. In 1894 she married Herbert Bedford (a composer of merit) and retired from concert work. Her most successful work is the song cycle *In a Persian Garden*, the words, taken from the *Rubaiyat* of Omar Khayyam, consisting of a connected group of solos and part songs. Other cycles are Tennyson's *In Memoriam*, *The Daisy Chain*, *Songs of Love and Spring*, *Nonsense Songs*, *Songs of Good Luck*. None of her later cycles has had the vogue of the *Persian Garden*. She also wrote two operas, *Sergeant Brue* (1904) and *The Vicar of Wakefield* (1906). In 1910 she made a most successful tour of the United States with her two cycles *In a Persian Garden* and *Nonsense Songs*. Her work is marked by a refinement of sentiment which betrays strongly the influence of Schumann.

LEHMANN, MAX (1845-). A German historian, born in Berlin and educated at Königsberg, Bonn, and Berlin. In 1879 he began to teach in the Berlin Military Academy, in 1887 was made a member of the Prussian Academy, and a year later went to Marburg as professor of history. In 1892 he was appointed to a like chair at Leipzig and in 1893 became professor of mediæval and modern history at Göttingen. He wrote: *Das Aufgebot zur Heerfahrt Ottos II. nach Italien* (1869); *Der Krieg von 1870 bis zur Einschliessung von Metz* (1873); *Knesebeck und Schön: Beiträge zur Geschichte der Freiheitskriege* (1875); *Stein, Scharnhorst und Schön* (1877); *Scharnhorst* (1886-87), which won a prize; *Friedrich der Grosse* (1894); *Freiherr von Stein* (1902-05), which won the Wedekind prize; *Historische Aufsätze und Reden* (1911); *Die Erhebung von 1813* (1913).

LEHMANN, OTTO (1855-). A German physicist; born in Constance and educated at Strassburg. From 1876 to 1883 he taught in the Gymnasium at Mülhausen and then in schools of technology at Aix (until 1888) and, after a year at Dresden, at Karlsruhe. Besides

contributions to German technical periodicals and to Meyer's *Konversations-Lexikon*, he wrote: *Physikalische Technik* (1885); *Molekularphysik* (1888-89); *Krystallanalyse* (1891); *Elektrizität und Licht* (1895); *Versuchsergebnisse und Erklärungsversuche* (1899); *Flüssige Krystalle und die Theorie des Lebens* (1906; 2d ed., 1908); *Die scheinbar lebenden Krystalle* (1907); *Die wichtigsten Begriffe und Gesetze der Physik* (1907); *Die Kristallisations-Mikroskop* (1910). He revised Frick's *Physikalische Technik* (7th ed., 1902-04) and Müller's *Grundriss der Physik* (1896).

LEHMANN, PETER MARTIN ORLA (1810-70). A Danish lawyer and politician, born and educated in Copenhagen. He early entered politics, became editor of *Kjøbenhavnsposten* (1835), and founded *Fædrelandet* (1839) as organ of the opposition. An enthusiastic friend of freedom, he worked for the national-liberal ideas, founded the Society for the Freedom of the Press (1839), started the Schleswig movement, and worked for the political and economic interests of the farmers. In 1848 he became Minister in the "March Ministry," later Governor, in 1851 an influential member of the Folketing, and in 1854 member of the Landsting. After 1860 he urged the government to take a strong stand against Prussia, and in 1861 Hall, to satisfy public demand, had to take him into his ministry. He was an enthusiastic adherent of "Scandinavisme," the aim of which was the political and cultural unity of the three Scandinavian countries. He wrote *Om Aarsagerne til Danmarks Ulykke* (1864; 8 editions; Eng. trans.). H. Hage and C. Ploug published his collected works (4 vols., 1872-74).

LEHMANN, RUDOLPH CHAMBERS (1856-). An English journalist, lawyer, and politician, born near Sheffield. He graduated at Trinity College, Cambridge, became a barrister of the Inner Temple in 1880, and took a prominent part in Liberal politics. From 1890 he was a member of the staff of *Punch* and in 1901 was editor of the *London Daily News*. He published a volume on rowing (in the *Isthmian Library*, vol. iv, 1897), and in 1896-97 acted as head coach to the Harvard University crew. Further publications by him include a *Digest of Overruled Cases* (1887), with Dale; *The Billbury Election* (1892); *Mr. Punch's Prize Novels* (1893); *Annæ Fugaces* (1901); *Adventures of Picklock Holes* (1901); *Crumbs of Pity* (1903); *The Sun-Child* (1904); *The Complete Oarsman* (1908); *Memories of Half a Century* (1908); *Light and Shade* (1909); *Charles Dickens as Editor* (1912), an edition of previously unpublished letters of Dickens, edited by Lehmann; *Sportsmen and Others* (1912); *The Spark Divine: A Book for Animal Lovers* (1913). In 1906 he was elected to Parliament as a Liberal from Leicestershire, South.

LEHMANN-HAUPT, CARL F. (1861-). A German-English archaeologist and historian. He was born in Hamburg of a family of artists and was educated at the Johanneum there and at Heidelberg, Leipzig, Göttingen, Johns Hopkins, and Berlin universities. He was assistant in the Egyptian department of the Royal Museum at Berlin from 1887 to 1898 and taught ancient history in the University of Berlin in 1893-98. He then traveled in Armenia and in 1901 became professor of Greek antiquities at Liverpool. In his special field of Armenian and Babylonian history and archaeol-

ogy he wrote: *Das alt-babylonische Mass- und Gewichtssystem* (1893); *Zwei Hauptprobleme der altorientalischen Chronologie* (1898); *Materialien zur alten Geschichte Armeniens und Mesopotamiens* (1907); *Die historische Semiramis und ihre Zeit* (1910); *Israel, seine Geschichte im Rahmen der Weltgeschichte* (1911); *Solon, the Poet, the Merchant and the Statesman* (1912); and a sketch of Greek history to Chæroneia (1913) in Gercke and Norden's *Einkleitung in die klassische Philologie*.

LEHR, IAR, JULIUS (1845-94). A German economist, born at Schotten, Hesse, and educated at Giessen. He taught at Munich from 1885 until his death. Lehr wrote: *Schutzzoll und Freihandel* (1877); *Eisenbahntarifwesen und Eisenbahnmonopol* (1879); *Politische Oekonomie in gedrängter Fassung* (4th ed, 1905); *Grundbegriffe und Grundlagen der Volkswirtschaft* (1894; 2d ed., 1901); *Produktion und Konsumtion in der Volkswirtschaft* (1895, ed. by Frankenstein).

LEHR, IAR, PAUL ERNEST (1835-). A French legal scholar, born at Saint-Dié (Vosges). He studied in Strassburg, where he was admitted to the bar, and where in 1870 he helped defend the city as captain of the National Guard. In 1875 he was appointed professor of comparative jurisprudence at the Academy of Lausanne, Switzerland. He contributed especially to the knowledge of foreign law by the publication of *Éléments de droit civil germanique* (1875); *Éléments de droit civil russe*, i (1877), ii (1890); *Éléments de droit civil espagnol*, i (1880), ii (1890); *Éléments de droit civil anglais* (1885).

LEHR, IARS, KARL (1802-78). A German classical scholar, born at Königsberg. He studied at the university of Halle and was made professor there in 1845. His most valuable work is *De Aristarchi Studii Homericis*, a comprehensive treatise on early Homeric criticism (1833, 3d ed., 1882), of great value; it led scholars to explain Homer from Homer himself. Of his other writings, mention should be made of his *Quæstiones Epicæ*, dealing with Hesiod (1837); *Herodiani Trias Scripta Minora* (1848); *Populäre Aufsätze aus dem Altertum, vorzugsweise zur Ethik und Religion der Griechen* (1856; 2d ed., enlarged, 1875); and *Die Pindarscholien* (1873), an investigation into the sources of the remaining scholia. Consult E. Kammer, *Karl Lehrs* (Berlin, 1879), and J. E. Sandys, *A History of Classical Scholarship*, vol. iii (Cambridge, 1908).

LEIB, IAP, MICHAEL (1760-1822). An American politician, born in Philadelphia, Pa., of Pennsylvania-Dutch parentage. A Republican of the most radical type, and at first an ardent supporter of Jefferson, he began his political career as a member of the Pennsylvania Legislature. Elected in 1798 to Congress, where he served until February, 1806, he soon attracted attention by his extreme views. In 1802 he became associated with William Duane (q.v.), who, with his journal, the *Aurora*, was beginning to make things uncomfortable for the Jefferson administration. In 1803 he opposed the bill for the creation of Louisiana Territory, drawn probably by Jefferson and Madison, as conferring "royal" power upon the Governor. He was the official mouthpiece of the Duane faction in its successful fight against the McKean-Dallas party, the "quids" as the *Aurora* called them, and, in spite of great opposition,

was triumphantly returned to Congress in 1804. On the floor of the House he reechoed the philippics of the *Aurora* against Gallatin, who had become the special object of Duane's enmity. He was elected to the Senate to fill a vacancy, took his seat in January, 1809, and served until February, 1814, when he resigned. In the Senate he continued his hostility to Gallatin and Madison to such an extent as almost to nullify the administration policy. In 1813, with William Branch Giles (q.v.) and Samuel Smith, he joined the Federalists in refusing to confirm the nomination of Gallatin to the Russian mission with J. A. Bayard and John Quincy Adams. In 1817-22 he was postmaster of Philadelphia by appointment of Gideon Granger (q.v.), the Postmaster-General. The appointment, made in the face of the President's opposition, resulted in Granger's dismissal, and legislation which required the confirmation of postmasters in the future.

LEIBERICH, IAR, BARON MACK VON. See MACK, KARL.

LEIBL, IAR, WILHELM (1844-1900). A German genre and portrait painter, one of the most important and influential of the later nineteenth century. He was born at Cologne, Oct. 23, 1844, and studied under Piloty and Ramberg at the Munich Academy. Impressed by the works of the French Realists, particularly Courbet, at the Munich Exhibition of 1865, he followed Courbet to Paris. In the Salon of 1870 he received the gold medal for his portrait of Frau Gedon. His sojourn in Paris was decisive in Leibl's career, and made him the pioneer of Realism in Germany. After his return to Germany in 1870 he retired to Graselfingen, Bavaria, and removed in 1881 to Aibling. Although he lived a secluded life, his influence extended over an entire generation. He combined unusual knowledge with great artistic skill. Although a master of detail, he excelled also in broad sweeping brushwork. His genre subjects are Bavarian peasants, but he does not treat them anecdotally, as did former German genre painters. They are the embodiment of a robust, sober, hard-headed race, seldom depicted in action, yet full of latent power and energy. His art falls into three periods. In the first he paints under the influence of the French Realists, with great breadth and power, as in the "Cocotte" and the "Dinner Party" (Herr Seeger, Berlin). The transition to careful surface execution can be traced in "The Dachauer Peasant Women" (1874) and the "Hunter" (both in the National Gallery, Berlin), and in "The Village Politicians" (1876). The minute finish of his second period is best shown in "Three Women in Church" (1883, Hamburg Gallery). His third manner combines breadth, delicacy, and a marvelous fusion of color, suggestive of Holbein, in a light joyous tone. To this period belong his "Two Poachers" (Berlin Gallery), "Old Woman Spinning," "Reading the Paper," "A Provincial" (Pinakothek, Munich), "In the Kitchen" (Stuttgart Museum). His portraits, which are among the best of the century in Germany, include likenesses of his father (Wallraf-Ricartz Museum, Cologne), the painter Paulsen (Berlin Gallery), Frau Rosner Heine (1900), and the landscape painter Sperl (Budapest Gallery), with whom he occasionally collaborated, notably in "Girls in a Fruit Orchard" (Cologne Museum). Leibl was also an etcher of note. He became a member of the

Academy of Berlin, and received the Prussian large gold medal for art and several exhibition medals. Consult his biographers Gronan (Bielefeld, 1901) and Maur (Berlin, 1906).

LEIBNITZ, lib'nits (Ger. *Leibniz*), GOTTFRIED WILHELM VON (1646-1716). A German philosopher and mathematician, born in Leipzig, July 1, 1646. His father, who was professor of law at the university, died when Leibnitz was six years old. He studied at the *Nikolaischule* of his native city, entered the university with unusual preparation, in his fifteenth year, and selected the law as his profession, but devoted himself also to philosophy and literature. When 17 years old he defended a remarkable thesis entitled *Disputatio Metaphysica de Principio Individui*, and in the summer of the same year he spent some time at the University of Jena, studying mathematics. In 1664 he published *Specimen Difficultatis in Jure*, and in 1666 *Dissertatio de Arte Combinatoria*. In the latter year he presented himself for the degree in law. In consequence of his youth, however, he was not permitted to take it at Leipzig, but a few months later, November, 1666, he received the degree of *doctor juris* from Altdorf. After pursuing further studies he had the good fortune to become a kind of protégé of Baron von Boyneburg, ex-Prime Minister to the Elector of Mainz. At Boyneburg's suggestion he dedicated to the Elector an essay, *Nova Methodus Discendæ Docendæque Jurisprudentiæ* (1667). This gained an appointment for Leibnitz in the Elector's service. Leibnitz now (1668-69) set to work to reform the *Corpus Juris* (q.v.). Meanwhile he published several theological treatises. In 1670, at the age of 24, he was appointed assessor on the bench of the upper court of appeals, which was the supreme court of the electorate. In 1672 he accompanied Boyneburg's sons to Paris, and there wrote with a view to submission to Louis XIV a plan for the invasion of Egypt. Leibnitz's real intention in this memorandum was to divert Louis's attention from plans against Germany. Louis seemingly never received this document; at any rate he did not act on the advice. It was reserved for Napoleon to make the invasion of Egypt (1798), and five years later (1803) Napoleon discovered to his surprise that he had been anticipated in his plan by the German philosopher. From Paris Leibnitz went to London; both in Paris and in London he formed the acquaintance of the most eminent philosophers, among them Boyle, Huygens, and Malebranche. In 1676 Leibnitz entered the service of the Duke of Brunswick-Lüneberg as librarian and privy councillor. After a tour of historical exploration, he prepared a series of works illustrating the history of the house of Brunswick. He undertook likewise the scientific direction and organization of the mines in the Harz, into which he introduced many improvements; he took an active part in negotiations for Church unions, and in the theological discussions connected therewith, which formed the subject of a protracted correspondence with Bossuet and with Pellisson. His private studies, however, were chiefly philosophical and philosophical. He was chief organizer in 1700 and first president of the Academy of Sciences of Berlin, which later became the Berlin Academy; and he proposed at Vienna the establishment of a similar organization, which, however, was not established till 1846, the two hundredth an-

niversary of his birth. It was to him, likewise, that Peter the Great owed the plan of the since celebrated Academy of St. Petersburg. The Czar bestowed on Leibnitz a pension and the title of Privy Councillor. In 1714 Leibnitz wrote the *Monadologie* in French for Prince Eugene of Savoy. In the same year he was appointed Privy Councillor and Baron of the Empire. Towards the close of his life Leibnitz spent some time in further work on the annals of the house of Brunswick, and was drawn into a philosophical controversy with Samuel Clarke (q.v.). Before the close of the controversy he died rather unexpectedly at Hanover, Nov. 14, 1716. A monument has been erected to him in Hanover, and in 1883 a statue was unveiled in Leipzig.

Leibnitz was eminent in history, divinity, philosophy, political studies, experimental science, mathematics, mining engineering, and even belles-lettres. But it is chiefly through his philosophical and mathematical reputation that he lives in history. He was greatly influenced by the Cartesian philosophy; but he differed from Descartes both in his method and in some of his principles. In epistemology Leibnitz was an opponent of the doctrine that the mind, at birth, is a *tabula rasa*, a blank tablet to be written on by experience. He maintained, on the contrary, that, although we are not born with ready-made knowledge in the sense of clear, distinct ideas, still there are "small, dark notions of the soul," which are not the mere passive results of impressions. There may be perceptions of which we are not aware, or which are not aware of themselves. Indeed, in the last resort, Leibnitz denies the reality of everything which is not a percipient or a perception. The perception may be very minute, so as not to be self-conscious, or it may be conscious of itself. In the latter case it is called apperception. Growth in knowledge consists in the process of clarification and distinction of ideas. Sense is not fundamentally different from intellect; it is only confused intellect. Nothing comes to the soul from without. Everything it seems to acquire in the process of learning is originally possessed in obscure form. Virtually, therefore, all ideas are innate in the sense that they are not acquired; but the explicit consciousness of them is acquired. That which has presentations is called by Leibnitz a monad, or a unity, just because it is thus a self-contained system of perceptions, not influenceable from without. It is described as having no windows through which it can look out upon the rest of the universe, but as mirroring the whole universe within itself. But because each monad mirrors the whole universe, each is in so far like the others; the perceptions in each are precisely alike in content; the only difference is that these perceptions may vary indefinitely in clearness and distinctness. Those monads in which all perceptions are obscure are called matter; from matter up to God there is no difference in kind, merely a difference in degree of clearness and distinctness of presentations. Monads are found in all stages of clearness of presentation (see CONTINUITY, LAW OF), and each monad tends towards clarification and distinction of these presentations. Those presentations which are merely clear, but not distinct, i.e., which are not confused with others, but are not adequately known in themselves, are objects of empirical or contingent knowledge; those pres-

entations which are both clear and distinct are objects of rational or necessary knowledge. The validity of rational knowledge is guaranteed by the principle of contradiction that of empirical knowledge by the principle of sufficient reason, which Leibnitz was the first to introduce into a system of philosophy. In other words, necessary truths are analytical, contingent truths synthetical. The latter must have authentication from without; an adequate reason must be given for their validity. The former are authenticated by the fact that it is impossible to think their opposites. The changes that take place at the same time in various monads have no influence on each other. There is no interaction. But there is a preestablished harmony of such sort that presentations in one monad correspond to those in another. The relation between any two monads is likened to that between two clocks keeping perfect time. They do not influence each other's movements, but they keep together. This correspondence is due to the fact that God, the monad of monads, created all other monads in such a way that in their subsequent course of development their changes should harmonize. These monads are immortal. In choosing to create this world of monads, God selected the best of all possible worlds. God's wisdom gave Him an infinite range of choice; His goodness determined the selection He made. This is Leibnitz's peculiar optimism, which does not assert that everything is perfectly good, but that the world as a whole is the best of all possible worlds. In this way Leibnitz sought to justify God in creating a world with evil in it. This is Leibnitz's theodicy.

His mathematical work is worth special treatment. He began his work on the calculus (q.v.) about the time of his settling in Hanover in 1676, and two years later he had developed it into a fairly complete discipline. It was not, however, until six years after this that he published (1684) anything upon the subject. Two years earlier (1682) he and Mencke founded the *Acta Eruditorum*, and it was in this celebrated journal that most of his mathematical memoirs appeared (1682-92). The first one on the new calculus was his *Nova Methodus pro Minimis et Maximis* (1684). Newton (q.v.) had known and used the principles of the fluxional calculus as early as 1665, and had made them public, although not in print, in 1669. Leibnitz had access to certain letters of Newton's in 1676. He also had the opportunity of knowing of the theory when he was in London in 1673, and with the mathematical acquaintances he met there it might be expected that the new theory would be discussed. There is, however, no exact evidence that he knew anything of Newton's discovery at the time he began his own work. It should, however, be stated that the germs of the theory of the calculus are to be found in the works of Fermat, Wallis, and Cavalieri, all of which were well known at that time in the mathematical world.

The essential differences in the two systems lie in the notation and the method of attack. Newton used \dot{x} where Leibnitz used dx , and based his treatment on the notion of velocity of material substances where the latter proceeded from the concept of the infinitesimal. As mathematics developed, the differential notation proved greatly superior to the fluxional, and in the first quarter of the nineteenth century it was

adopted in England, as it had been adopted a hundred years earlier on the Continent. With this change of notation the so-called fluxional calculus disappeared and the differential calculus took its place.

The further mathematical work of Leibnitz was not of a high order. His contributions to analytic geometry were noteworthy only for laying the foundation (1692) for the theory of envelopes, and for introducing the terms "coordinates" and "axes of coordinates." He contributed a little to the theory of mechanics, but his work was often inaccurate, and he made no great discoveries.

In addition to Leibnitz's works already referred to, special mention should be made of *Nouveau système de la nature* (1695); *Essais de théodicée* (1710); *Principes de la nature et de la grâce* (1714); *Nouveaux essais sur l'entendement humain* (finished by 1704 and published posthumously in 1765), and *A Collection of Papers which Passed Between the Late Mr. Leibnitz and Dr. Clarke in the Years 1715 and 1716* (London, 1717). His Latin and French philosophical works have been many times collected, edited, and published. The editions of Erdmann (Berlin, 1840), of Jaret (Paris, 1866; 2d ed., 1900), and of Gerhardt (Berlin, 1875-90) are especially noteworthy. The publishing of a complete edition of all Leibnitz's works was undertaken by Pertz. This edition, as it now stands, contains four volumes of history (Hanover, 1843-47); seven volumes of mathematics, edited by Gerhardt (Berlin and Halle, 1849-63); but of the philosophical portion only one volume appeared. A satisfactory edition is yet to be published. In 1900 some French and German scholars undertook to prepare for such an edition; but so far only a few isolated volumes have appeared. In the *Journal of Speculative Philosophy* are to be found translations of the *Monadologie* and many of the lesser writings; and some of the important philosophical works have been translated by G. M. Duncan (New Haven, 1890); the *Nouveaux essais* by A. G. Langley (London, 1894); *The Monadology and Other Philosophical Writings* by R. Latta (Oxford, 1898).

Bibliography. E. A. Feuerbach, *Darstellung, Entwicklung, und Kritik der leibnizschen Philosophie* (Anspach, 1837); G. E. Guhrauer, *Gottfried Wilhelm Freiherr von Leibniz* (1842-46; abbreviated English version, Boston, 1845); Robert Zimmermann, *Leibnizs Monadologie* (Vienna, 1847); J. F. Nourrisson, *La philosophie de Leibniz* (Paris, 1860); Edmund Pfeiderer, *G. W. Leibniz als Patriot, Staatsmann und Bildungsträger* (Leipzig, 1870); F. Kirchner, *G. W. Leibniz* (Cöthen, 1876); J. T. Merz, *Leibniz* (London, 1884); Adolf Harnack, *Leibnizs Bedeutung in der Geschichte der Mathematik* (Stade, 1887); John Dewey, *Leibniz's New Essays Concerning the Human Understanding* (Chicago, 1888); Eduard Dillmann, *Eine neue Darstellung der leibnizschen Monadenlehre* (Leipzig, 1891); B. A. W. Russell, *Critical Exposition of the Philosophy of Leibniz* (London, 1900); Louis Couturat, *La logique de Leibniz* (Paris, 1901); Ernst Cassirer, *Leibnizs System in seinen wissenschaftlichen Grundlagen* (Marburg, 1902); Heinz Heimsoeth, *Die Methode der Erkenntnis bei Descartes und Leibniz* (2 vols., Giessen, 1912-14). Consult also the histories of philosophy by Friedrich Ueberweg (3 vols., Berlin, 1871-88; new ed., ib.,

1907-09; Eng. trans., 2 vols., New York, 1884); F. O. R. Falckenberg (New York, 1893); E. K. B. Fischer (10 vols., Heidelberg, 1897-98); Wilhelm Windelband (2d ed., New York, 1910); Harald Höffding (ib., 1912); Frank Thilly (ib., 1914).

LEICESTER, lēs'tēr. The capital of Leicestershire, England, on the Soar, 100 miles north-northwest of London (Map: England, E 4). It is well built, with spacious and regular streets, interesting municipal buildings, educational and benevolent institutions, and numerous churches, one of which, St. Nicholas, is partly constructed of bricks from the old Roman wall. It is a progressive municipality, and owns or maintains an excellent water supply, gas and electric-light plants, markets, abattoirs, baths, bathing places, libraries, technical schools, an art gallery, artisans' dwellings, garden allotments, four parks, eight recreation grounds and two public gymnasiums, three sewage farms, an isolation hospital, a lunatic asylum, cemeteries, a fire brigade, and an effective police force. Manufactures of boots and shoes, elastic webbing, and woolen and cotton hosiery goods, lace making, wool combing, matting, brickmaking, and dyeing are extensively carried on. Leicester lies near a coal field, and is the centre of a famous agricultural and wool-raising district. It is also a suffragan bishopric of the diocese of Peterborough. An early British city, the capital of the Coritani, it was known to the Romans as Ratæ. It was one of the five Danish burghs, and from 680 to 874 the seat of a bishopric. The Mount or Castle View, an artificial earthwork on which stood the donjon or keep, and the great banqueting hall, modernized and used as an assize court, are all that remains of the Norman castle, dismantled by Charles I in 1645. The ruins of the abbey of St. Mary Pré (of the Meadow), where Cardinal Wolsey died in 1530, still exist. Numerous municipal charters and privileges, the first granted by King John and the last by Queen Elizabeth, governed the town prior to the Municipal Corporations Act. Thomas Cook (1808-1892), the founder of Cook's tours, was born in the town. Pop., 1901, 211,600; 1911, 227,242. Consult: Johnstone, *History of Leicester* (1892); "Leicester as a Municipality," in *Municipal Journal*, viii, 878 (London, 1899); Bateson, Stevenson, and Stocks, *Records of the Borough of Leicester* (Cambridge, 1901).

LEICESTER. A town in Worcester Co., Mass., 6 miles west-southwest of Worcester (Map: Massachusetts, D 4). It is in a fertile agricultural region, which contains some good timber. The manufacture of clothing constitutes the chief industry. The town has a public library. Pop., 1900, 3416; 1910, 3237.

LEICESTER. A tragedy by William Dunlap (1794), said to have been the first American tragedy put on the stage. It is also called *The Fatal Deception*.

LEICESTER, EARL OF. See MONTFORT, SIMON DE.

LEICESTER, ROBERT DUDLEY, EARL OF (c.1532-88). A favorite of Queen Elizabeth. He was the fifth son of John Dudley, Duke of Northumberland, and received a very good education. At an early age he was taken to court, where he met the Princess (later Queen) Elizabeth. In 1550 he was married publicly to Amy Robsart, and, although they lived much apart, there was never, so far as is known, any serious

quarrel between them. After the death of Edward VI, in 1553, Dudley aided in the attempt to place his sister-in-law, Lady Jane Grey on the throne, for which he was imprisoned in the Tower. On the accession of Elizabeth in 1558, Dudley rapidly advanced and became the Queen's favorite, and for a long time it was thought they would marry. Nevertheless, Elizabeth allowed Dudley little or no influence in political affairs. The intimacy between Elizabeth and Dudley gave rise to several rumors of a scandalous nature, and when in 1560 Lady Amy was found dead from a fall down a flight of stairs, the belief spread that she had been murdered, though there is no evidence to prove that it was not an accident. Scott's *Kenilworth* is based on the popular rumors of the time. In 1563 it was suggested that Dudley should marry Mary, Queen of Scots, and he was made Earl of Leicester; but in 1565 the Scottish Queen married Darnley. Meanwhile Leicester had been made chancellor of Oxford University, but his future was darkened by the fact that Elizabeth realized the impracticability of marrying him, for he was very unpopular and opposed by all the old nobility. In 1571 he seems to have married the widow of John, second Baron of Sheffield, but afterward he refused to acknowledge her as his wife, and in 1578 married Lettice Knollys, Countess of Essex, at the news of which the Queen was very angry. When in 1585 Elizabeth decided to aid the Netherlands in their struggle for independence from Spanish rule, Leicester received command of the expedition, and in the following year the States-General elected him Governor. His incapacity, however, soon showed forth glaringly, and he lost town after town, so that the Dutch were glad when in 1587 he was recalled. In 1588 Elizabeth appointed him commander of the forces assembled to oppose the Spanish invasion, but he died soon after, on Sept. 4, 1588. Consult: Samuel Jebb, *The Life of Robert, Earl of Leicester* (London, 1727); Amye Robsart and the Earl of Leicester: A Critical Inquiry into the Authenticity of the Various Statements in Relation to the Death of Amye Robsart (ib., 1870); F. J. Burgoyne (ed.), *History of Queen Elizabeth, Amy Robsart, and the Earl of Leicester, being a Reprint of "Leicester's Commonwealth," 1641* (ib., 1904); Mrs. Aubrey Richardson, *The Lover of Queen Elizabeth* (ib., 1907).

LEICESTERSHIRE. An inland administrative county of England, south of the counties of Derby and Nottingham. Area of county 819 square miles; pop., 1901, 225,911; 1911, 249,361 (Map: England, E 4). The Soar and Avon, tributaries respectively of the Trent and Severn, are the chief rivers. Coal is mined in the west, and granite, slate, and freestone are quarried. The soil is a loam of varying degrees of fertility, and while barley, wheat, and oats are cultivated, the chief agricultural branches are grazing, stock raising, and dairy farming. Stilton cheese is chiefly made in this county, while Melton Mowbray is famous for its pork pies. The local breed of sheep is noted for its fine wool. The principal manufactures are hosiery, agricultural implements, and pottery. Leicestershire is one of the greatest fox-hunting counties in England, the chief centre of this sport being at Melton Mowbray, and the Quorn hunt at Quorndon is one of the most famous in the country. Capital, Leicester. The early inhabitants were the

Celtic Coritani, who were conquered by the Romans. Later the region was part of the Mercian Kingdom, until subdued by the Danes, and afterward by the Normans.

LEICESTER SQUARE. A London square, formerly Leicester Fields, laid out in the latter part of the seventeenth century. Many French Huguenots made their residence there after the revocation of the Edict of Nantes in 1685, and it is still a popular foreign quarter. Savile House and Leicester House once stood on it, and in the latter Queen Elizabeth of Bohemia died in 1662. Reynolds, Hogarth, Hunter, and Newton lived in the . . . and their busts adorn the square . . . seventeenth century it frequently served as a dueling ground.

LEICHHARDT, LIK'härt, FRIEDRICH WILHELM LUDWIG (1813-48). A German explorer, born at Trebatsch, Province of Brandenburg, Prussia. After studying philology at Göttingen and natural history at Berlin, he traveled in Italy, France, and England and in 1841 went to Australia. Here he at once began the geological investigations which he later described in his *Contributions to the Geology of Australia* (1855). In 1844 he set out on his second expedition to Australia, and with about seven companions traveled from Moreton Bay, on the eastern coast, through Queensland, to Port Essington, in the extreme north of the continent. After accomplishing this journey, in which he covered about 2000 miles in 16 months, Leichhardt returned to Sydney and published the results of his expedition in his *Journal of an Overland Expedition in Australia from Moreton Bay to Port Essington* (1847). In March, 1848, he started on his last trip, in which he proposed to go from Moreton Bay across the central part of the continent from east to west. The last information received from him was sent from Macpherson's Station on the Cogoon River, on April 3, 1848. No less than five relief expeditions were organized in 1851-65, but these failed to discover a trace of the lost explorer, whose disappearance remains unexplained. A district or grand division of Queensland, a county of New South Wales, and a town in Cumberland County, N. S. W., not far from Sydney, were named in his honor. Consult the study by Zuchold (Leipzig, 1856).

LEICHTENTRITT, LIK'ten-trit, HUGO (1874-) A German writer on music, born at Pleschen (Posen). In 1889 he came to America, and soon afterward entered Harvard, where he studied music under J. K. Paine. He returned to Germany in 1895, spending the next three years as a pupil of the Königl. Hochschule in Berlin. In 1901 he joined the faculty of the Klindworth-Scharwenka Conservatory. Numerous essays published in various musical journals soon established his reputation. Among his more important books are: *Chopin* (1904), *Geschichte der Musik* (1905), *Geschichte der Motette* (1908). He edited many works of older masters, and also made himself known as a composer of meritorious songs and chamber music.

LEIDEN, LI'den. A city of the Netherlands. See **LEYDEN**.

LEIDENFROST, LI'den-fröst, JOHANN GOTTLIEB (1715-94). A German scientist and professor of medicine. He was born at Rosperwenda, was educated in Giessen, Leipzig, and Halle, and in 1743 became professor at Duisburg. He is best known from his book *De Aquæ*

Communis Nonnullis Qualitatibus (1796) and for his *Opuscula Physico-Chemica et Medica* (1797). In the former he describes the experiment, sometimes called after him, in which he dropped water on a hot plate and proved the spheroid shape of the drop and the presence of a layer of vapor between drop and plate.

LEIDY, LI'di, JOSEPH (1823-91). A distinguished American naturalist, born in Philadelphia, Pa. He obtained his degree in medicine at the University of Pennsylvania in 1844, executed the dissections and drawings for the work on *Terrestrial and Air-Breathing Mollusks of the United States* (Boston, 1845), by Amos Binney, was appointed chairman of the Board of Curators of the Academy of Natural Sciences in 1846, and became demonstrator of anatomy in the University of Pennsylvania. In 1853 he was appointed full professor of anatomy in the Medical School of the university. He was also the first director of the biological department of the university, organized in 1884, and for a time occupied the chair of natural history in Swarthmore College. In 1881 he was elected president of the Academy of Natural Sciences at Philadelphia and in 1885 president of the Wagner Free Institute of Science in that city. He received the Walker grand honorary prize of the Boston Society of Natural History in 1880, and, for distinguished contributions to the science of paleontology, the Sir Charles Lyell medal of the Royal Geological Society of London in 1884 and the Cuvier medal of the Institut de France in 1888. His contributions to the natural sciences included comparative anatomy, botany, mineralogy, geology, and microscopic zoology, helminthology, and more especially paleontology. His researches in connection with the fossil horse and camel, published in the *Proceedings* of the Academy of Natural Sciences and of the Smithsonian Institution from 1847 to 1891, were of acknowledged service to Darwin and Sir Charles Lyell. He also discovered (1846) the hog to be the host by which the parasite *Trichina spiralis* is introduced into the human system. His writings include numerous papers contributed to the *Transactions* of the American Philosophical Society, the publications of the Wagner Free Institute of Science, Smithsonian publications under the auspices of the United States Geological Surveys, and the *Journal and Proceedings* of the Academy of Natural Sciences—in all, 553. *A Flora and Fauna within Living Animals* (1851); *Description of the Remains of Extinct Mammalia and Chelonians from Nebraska Territory* (1852), *Cretaceous Reptiles of the United States* (1865); *The Extinct Mammalia Fauna of Dakota and Nebraska* (1869); *Contributions to the Extinct Vertebrate Fauna of the Western Territories* (1873); *The Fresh-Water Rhizopods of North America* (1879); *Treatise on Human Anatomy* (1861-89), are among the most important. Dr. Leidy was an honorary member of more than 65 scientific societies of the United States and other countries. Consult the memoir by H. C. Chapman, in the *Proceedings* of the Academy of Natural Sciences (1891).

LEIF (LI'f) **ERICSON.** See **ERICSON, LEIF**.

LEIGH, LI. A town in Lancashire, England, 11 miles west of Manchester. Silk, cambric, muslin, fustian, and agricultural implements are the leading manufactures; there are glass-works, foundries, and breweries, and in the

vicinity are productive coal mines (Map: England, D 3). The town has an ancient and heavily endowed grammar school and a restored parish church dating from 1279. It owns its gas, water, and electric-lighting works, baths, markets, and cemetery, and maintains a free library, hospital, and fire brigade. Sewage is chemically treated and utilized. The town dates from the twelfth century, but was not incorporated until 1899. Pop., 1901, 40,000; 1911, 44,103.

LEIGH, EDWARD (1602-71). An English Puritan writer, born at Shawell, Leicestershire. He graduated M.A. at Oxford University in 1623 and enrolled at the Middle Temple. He was elected a member of Parliament in 1640 and became a colonel in the Parliamentary army in 1644, but was among those expelled from the House of Commons in 1648. His chief work was the *Critica Sacra, or Observations upon all the Greek Words of the New Testament and on the Primitive Hebrew Words of the Old Testament* (2 vols., 1639-42; 4th ed., 1662). He was also author of *A Treatise of the Divine Promises* (1633; 4th ed., 1657); *A Treatise of Divinity* (3 parts, 1647); *The Saint's Encouragement in Evil Times* (1648; 2d ed., 1651); *A Systeme or Body of Divinity* (1654, 2d ed., 1662).

LEIGHTON, ALEXANDER (1568-1649). An English physician and divine. He was born at Edinburgh, Scotland, was educated at St. Andrews, and in 1613 became a Presbyterian preacher in London, practicing medicine at the same time. He published: *Speculum Belli Sacri, or The Looking-Glass of the Holy War* (1624), an attack on Romanism; and an *Appeal to the Parliament, or Sworn's Plea against the Prelacie* (1628). The latter—denouncing the bishops in unsparing terms, rebuking the King for marrying a papist, and bidding Parliament rid him of his bad advisers—was deemed libelous in respect of the King, Queen, and bishops. Leighton was sentenced by the Star Chamber to be degraded from holy orders, to be twice whipped publicly, to lose his ears, one at a time, to have his nose slit, to stand twice in the pillory, to be branded on the face with the letters S. S. (sower of sedition), to pay a fine of £10,000, and suffer life imprisonment in the Fleet. After the first half of the sentence of physical torture had been executed, Leighton escaped; upon his capture the second half was apparently remitted. The Long Parliament released him in 1640, after he had been confined for 11 years. He received a pecuniary indemnity and in 1642 was made keeper of Lambeth Palace as a state prison, where he died.

LEIGHTON, FREDERICK, LORD (1830-96). An English historical painter. He was born at Scarborough, Dec. 3, 1830, and spent much of his youth in travel. His father, a physician of means, enabled him to prosecute very extensive studies in painting. He began at 14 in Florence, continuing in Frankfort, Brussels, Paris, and Rome, his chief master having been Steinle at Frankfort. His first picture, exhibited at the Royal Academy, "Cimabue's Madonna Carried in Triumph through Florence" (1855, Tate Gallery, London), made a great impression and was purchased by the Queen. After this he spent four years in Paris, studying part of the time under Ary Scheffer. In 1858 he joined for a short time the Pre-Raphaelite Brotherhood, his "Lemon Tree" and "Byzan-

tine Wellhead" receiving the enthusiastic praises of Ruskin. He soon ceased this manner, and in 1866 his "Venus Disrobing for a Bath," one of his most admirable pictures, secured his election as associate of the Royal Academy. He became a member in 1869 and president in 1878, fulfilling the public functions with especial grace. Although a bachelor, he entertained royally in his fine house at Kensington. He received first-class medals at Antwerp in 1885 and Paris in 1889, was an honorary member of many foreign academies and orders, and received honorary degrees from Oxford, Cambridge, and Edinburgh. In 1886 he was made Baronet, and on Jan. 21, 1896, he was raised to the peerage as Baron Leighton of Stretton. He died on the following day in London and was buried in St. Paul's Cathedral.

Leighton was a clever rather than a great artist. His work is finished and painstaking, the result of study and cultivated taste rather than genius. His art is the equivalent of the classical art of Ingres, softened by a sort of romantic feeling. His earlier works (before 1866) include: "Paolo and Francesca," the "Odalisque," "Dante at Verona," "Orpheus and Eurydice." Among the most important of his later paintings are: "Hercules Wrestling with Death" (1871); the "Condottiere" (Birmingham Gallery); "Summer Moon"; "Daphnephoria" (1876); portrait of Sir Richard Burton (1876), "Music Lesson" (1877); "Biondina" (1879); his own portrait (1880, in the Uffizi Gallery, Florence); "Wedded" (1882); "Last Watch of Hero" (1887); "Captive Andromache" (1888, Manchester Gallery); "Bath of Psyche" (1890, Tate Gallery); "Rizpah" (1893); "Phœnicians Trading with Britons," a decoration for the Royal Exchange. He painted a decoration "Music," for the ceiling of the Marquand residence, New York, and in the Metropolitan Museum are "Lachrymæ," "Lucia," and "An Odalisque." He painted a few portraits, the finest of which include those of Signor Costa, Mrs. Stephen Ralli, Sir Richard Burton, and his own portrait (Uffizi). Leighton also attempted a few pieces of sculpture with success, the best of which are "Athlete Struggling with a Python" (1877) and a "Sluggard," both in Tate Gallery. He also designed illustrations to George Eliot's *Romola* and *Daniel's Bible*. His *Addresses to the Students of the Royal Academy* were published in 1896.

Bibliography. The best works on Leighton are E. I. Barrington, *The Life, Letters, and Work of Frederick Leighton* (2 vols., New York, 1906); Edgumbe Staley, *Lord Leighton of Stretton* (ib., 1906). Briefer biographies are by L. B. Lang (London, 1885); Ernest Rhys (ib., 1905); Sir Wyke Bayliss, *Five Great Painters of the Victorian Era* (ib., 1902); Kenyon Cox, *Lord Leighton* (New York, 1907).

LEIGHTON, ROBERT (1611-84). Archbishop of Glasgow. He was born probably in London. He entered Edinburgh University in 1627, took his degree of M.A. in 1631, and afterward proceeded to France, where he was intimate with the parties of the Catholic church. Returning to Scotland, he was appointed, in 1641, to the parish of Newbattle, near Edinburgh; but he was not militant enough to please his fierce copresbyters, while they appeared to him, who had studied far more deeply than any Scotchman of his time the various ecclesiastical politics of Christendom, truculent about trifles.

In 1652 he resigned his charge and in the following year was elected principal of the University of Edinburgh and professor of divinity, a dignity which he retained for 10 years. After the restoration of Charles II Leighton, who had long separated himself from the Presbyterian party, was, with much reluctance, induced to accept a bishopric, as a part of the plan of the King to impose episcopacy upon Scotland. He chose Dunblane because it was small and poor. Unfortunately for his peace, the men with whom he was now allied were even more intolerant and unscrupulous than the Presbyterians. Twice he proceeded to London (in 1665 and 1669) to implore the King to adopt a milder course. Nothing was really done, though much was promised, and Leighton had to endure the misery of seeing an ecclesiastical system which he believed to be intrinsically the best perverted and himself made the accomplice. In 1670, on the deprivation of Dr. Alexander Burnet, he was made Archbishop of Glasgow, an office which he accepted only on the condition that he should be assisted in his attempts to carry out a liberal measure for "the comprehension of the Presbyterians." His efforts, however, were vain; the high-handed tyranny of his colleagues was renewed, and Leighton resigned in 1674. After a short residence in Edinburgh he went to live with his sister at Broadhurst in Horsted Keynes, Sussex, where he spent the rest of his days in retirement. He died June 25, 1684. Leighton's complete works (he published nothing during his lifetime) are to be found in an edition published in London (ed. by West, 7 vols., 1869-75); a volume of selections by Blair appeared in 1883. The most admired of his writings is his commentary on First Peter. Consult his biography by West and Blair in the editions mentioned above, and Bishop Burnet, *History of my own Time*. A Leighton bibliography, compiled by Blair, is in the *British and Foreign Evangelical Review* for July, 1883.

LEINSTER, lén'stēr. One of the four provinces of Ireland, occupying the southeast portion of the country and bounded on the east by St. George's Channel and the Irish Sea. Area, 7622 square miles; divided into the counties of Dublin, Meath, Louth, Kildare, Carlow, Kilkenny, Wexford, Wicklow, West Meath, Longford, King's, and Queen's (q.v.). Pop., 1901, 1,152,829; 1911, 1,162,044.

LEIPA, or **BÖHMISCH-LEIPA**, bě'mish lř'pā (Boh. *Ceská-Lipa*). A town of Bohemia, Austria, 42 miles north-northeast of Prague, on the river Polz (Map: Austria-Hungary, D 1). One of its Catholic churches was begun by Wallenstein in the seventeenth century. It manufactures print goods, velvet, sugar, starch, beer, leather, lumber, pianos, and has a trade and agricultural school. The shops of the Northern Railway of Bohemia are situated here. Pop., 1900, 10,674; 1910, 13,493, mostly Germans.

LEIPO'A (Neo-Lat., probably from the native name). An Australian megapode, called native pheasant and mallee bird by the country people. See MOUND BIRD.

LEIPZIG, lř'psik, or **LEIPSIC**, lř'psik. The largest city in the Kingdom of Saxony, and the third city in size in the German Empire, in lat. 51° 20' N. and long. 12° 23' E., situated on the Elster, Pleisse, and Parthe, 74 miles by rail northwest of Dresden (Map: Germany, E 3).

Leipzig lies in a rich and extensive plain. Its fortifications no longer exist, having given way to pleasant promenades. The mean annual temperature is 46.7° F.; rainfall in 1913, 23 inches.

In the old town, which has become more and more exclusively the business section, are many ancient buildings and narrow streets, diversified by handsome modern edifices in the Renaissance style. Here quaint, shop-lined courts serve to connect streets and shorten distances. This section is surrounded by finely built modern districts, forming both an inner and an outer circle of suburbs, beautified by spacious avenues and promenades. Beyond these suburbs are still other suburban areas, incorporated with the city in 1892 and subsequently. The spacious thoroughfare called the Brühl crowns the northern part of the old town. In the vicinity are the monument to Hahnemann, of homeopathic fame, and the monument, with the Polish eagle, on the spot where Poniatowski was drowned at the beginning of Napoleon's retreat in 1813. Along the avenues in the old town are large squares, the most important of which is the imposing Augustusplatz, surrounded by the Augusteum (main building of the university), post office, theatre, and museum—one of the largest squares in Europe. In the Johannisplatz rises the Reformation monument to Luther and Melancthon, unveiled in 1883 on the four hundredth anniversary of Luther's birth. In the market place in the centre of the old part of the town stands the great war monument by Siemering, with bronze figures, unveiled in 1888.

Architecturally the churches of Leipzig have little to offer. Their number is upward of 30, of which 25 are Evangelical-Lutheran. The Thomaskirche has more than a local fame for the weekly motets sung by a choir of boys. This church, dating from the early part of the thirteenth century, was enlarged in 1482 and rebuilt in 1885-89. The University or Pauline Church was built about 1240 and in 1545 was dedicated by Luther. During the reconstruction of the church of St. John, about 1895, the tomb of Bach was discovered. His remains as well as those of the poet Gellert repose in the new church. Leipzig has an Anglo-American church, dedicated in 1885. Among the prominent secular edifices, the several university buildings are of particular interest. Among these are the extensive Augusteum with an aula and fine reliefs; the Fridericianum, built in 1843, the Mauricianum, dating from 1649; and the immense Albertinum. The university library, containing 570,000 volumes in 1913, was completed in 1891. The imposing new Gewandhaus, with a large concert room, is enriched with sculptures by Schilling. In front stands the statue of Mendelssohn, who was the conductor of the Gewandhaus concerts for several years. The old Gewandhaus, or Hall of the Cloth Merchants, where he directed, is now used for business purposes. The splendid Imperial Supreme Court building was completed in 1895. It consists of a central edifice, with a copper dome 224 feet high surmounted by a large bronze figure of Truth, and of wings appropriately adorned with columns and sculptures. Other conspicuous edifices are the Booksellers' Exchange, in German Renaissance style, with archives and a library; the elegant new Renaissance Stock Exchange, with an immense hall; and the Crystal Palace, used for entertainment purposes. In the vicinity stands the curious old Rathaus, built in the

middle of the sixteenth century. The Königs-haus in the market place is associated with memories of Napoleon, Charles XII, and Peter the Great. In the old castle of Pleissenburg, formerly a citadel and destroyed in later years, Luther and Eck held their disputations, and Pappenheim died. The Museum building was completed in 1858, and is ornamented with statues. The splendid new theatre was finished in 1868 in the Renaissance style. Among all the literary associations of Leipzig no other is so famous as Auerbach's cellar, with its curious vaulted ceiling and mural paintings—the scene of a part of Goethe's *Faust*. Among the monuments not already mentioned are a bronze statue of Leibnitz, who was born in Leipzig, and the new monument to Bismarck, and the one to Schumann, who lived here for 14 years.

Leipzig is the centre of the German book trade, and is famous for its publishing industry. Other of its leading industries are wood carving and paper making. Still other products are machinery, leather, textile goods, pianos, tobacco and cigars, chemicals, and foodstuffs. Leipzig leads in the bookselling and publishing trade of the world, having about 1000 publishing and book-selling establishments (including those of the art and music trade). Its commercial importance is due in part to its favorable situation between the Elbe and Rhine basins, and between the Thuringian mountains and the Erzgebirge. It holds famous fairs at New Year's, Easter, and Michaelmas, with furs, glass, cloth, and leather as the principal lines of trade, the value of the annual sales amounting to \$50,000,000. Leipzig is a world market for furs. Since the middle of the nineteenth century the historic fairs, though increasing in the actual value of their transactions, have declined in relative commercial importance. Among the countries importing from Leipzig the United States ranks first. The American imports embrace furs and hides, books, leather gloves and leather, chemicals and volatile oils, bristles, woolen goods, carpets, and musical and other instruments.

Leipzig is famous for its educational advantages. Besides its university (see LEIPZIG, UNIVERSITY OF), there are a municipal Gymnasium, founded in 1221, among whose celebrated cantors was Bach; another municipal Gymnasium, dating from 1511; also two state Gymnasias, a municipal realgymnasium, four realschulen; a royal art academy, an industrial school; a royal builders' school; a municipal industrial school and many other schools, for secondary or special education. The first commercial high school in Germany was founded in 1898 in Leipzig. Besides the university library there is the municipal library with 129,500 volumes in 1913. The museum of the book trade is perhaps the most valuable of its kind in existence. The Grassi Museum contains art-industrial and ethnographical collections; also a fine Historical Museum of Music; and the Permanent Exhibition of Machinery and Furniture. The important collections of the Leipzig Museum include some noteworthy sculptures—Thorvaldsen's "Ganymede," Hildebrand's "Adam," Klinger's "Cassandra" and "Salome," and Schilling's "Phidias." Among its valuable pictures are Preller's cartoons representing scenes from the *Odyssey*, several examples of Lenbach and Böcklin, and Delaroche's "Napoleon at Fontainebleau." These collections contain more than 750 oil paintings, 275 sculptures, and 100 cartoons

and aquarelles. The Royal Academy of Plastic Arts dates from 1764. Leipzig abounds in admirable organizations for the advancement of knowledge. There are the Historical Society, with relics of the famous battlefield; the Academy of Art; School of Industrial Art; the Technical School; and the celebrated Royal Conservatory of Music, founded in 1887. In the new Gewandhaus weekly concerts are given in winter.

Leipzig has been since 1879 the seat of the supreme law court of the Empire. It is the seat also of the Imperial Discipline Court, and of numerous important institutions of the Kingdom of Saxony. The city government is administered by an overburgomaster, a burgomaster, a police director, about 25 magistrates, and some 75 councilmen. There are two municipal as well as other gas companies. The water works belong to the city. Since 1897 all the street railways have been electric. Among the many excellent hospitals the most prominent perhaps is St. John's, built in 1872. The municipal bakery is one of the features of the city. The environs, extremely attractive for their fine woods and meadows, are famous as having been the scene of the great battle of Leipzig (see LEIPZIG, BATTLES OF). The population of Leipzig in 1675 was about 20,000; in 1775, about 24,000; in 1800, about 32,000, in 1832, 43,189; in 1864, 85,394; in 1880, 149,081; in 1890, 357,122; in 1900, 456,124; in 1910 (census of December 1), 580,850. The area corresponding to the last figure is 79 square kilometers (over 30 square miles). Subsequent to the 1910 census suburbs were annexed, increasing the population (on the basis of that census) to 626,267. The population is overwhelmingly Protestant.

LEIPZIG, BATTLES OF. Leipzig was the scene of three noteworthy battles, two in the Thirty Years' War (q.v.) and one in the Napoleonic wars. 1. The first battle of Leipzig (or Breitenfeld, from the plain on which it was fought, about a mile from the city) was the first great battle in Germany of Gustavus Adolphus (q.v.). The Elector of Saxony, John George I (q.v.), was vacillating between the Imperial side and that of his fellow Protestants when Tilly (q.v.), the Imperial general, invaded Saxony and took Leipzig. The Elector closed an alliance with Gustavus, who on the 17th (old style 7th) of September, 1631, joined battle with Tilly. The Imperial army numbered about 44,000 men, that of Gustavus about 20,000, Swedes and Saxons. Tilly succeeded in routing the Saxon troops, but succumbed to the valor of the Swedes and to the genius of their commander. The Imperial army lost from 7000 to 10,000 men, while the loss on the part of the Protestant forces was about 2700, of whom only 700 were Swedish troops. The battle of Leipzig or Breitenfeld is important in military history as decisively demonstrating the superiority of mobility over weight in battle. More important still was its effect upon the progress of the Thirty Years' War. It was the first serious check which triumphant Catholicism had as yet encountered.

2. The second battle of Leipzig or Breitenfeld was won by the Swedes under Torstensson against the Imperialists, Oct. 23 (new style, Nov. 2), 1642.

3. The most celebrated of the battles around Leipzig was that fought between the French under Napoleon and an allied army of Austrians, Russians, Prussians, and Swedes under the supreme command of Prince Schwarzenberg, Oct.

16-19, 1813. It marked the triumphant issue of the Prussian War of Liberation, and is known as the Battle of the Nations from the number of nationalities that participated in the contest. German, Spanish, Italian, Portuguese, and Polish contingents fought in the ranks of the French army. At Dresden, on Aug. 26-27, 1813, Napoleon had won his last great victory in Germany, and this had been followed by a series of conflicts, Culm, Gross-Beren, and Katzbach among others, in which separate corps of the French army met with disaster. Napoleon took his last stand at Leipzig as the most favorable situation from which to threaten the individual armies that were converging on his position from Bohemia, Silesia, and the north. The disposition of the French forces on the first day of the battle was as follows: to the southeast of the town and at a distance of some four miles was the main force under Napoleon, numbering about 130,000 men, with 700 cannon, and stretching in a great semicircle between the villages of Markkleeberg and Holzhausen. The extreme right of the line was held by the Poles under Poniatowski, with the corps of Augereau and Oudinot in the centre, and Victor and Lauriston on the left. The Old and Young Guard and the cavalry under Murat and Latour-Maubourg were held in reserve. Napoleon directed the battle in person from the hillock of Wachau. To the west of the town was a force of 10,000 men under Bertrand at Lindenau, guarding the only line of retreat to France, and to the north 30,000 men under Marmont at Möckern, intended to prevent the junction of the Army of Silesia under Blücher and the Army of the North under Bernadotte with the main army of the allies advancing from Bohemia. Marshal Ney held the general command over the forces of Bertrand and Marmont. Schwarzenberg, who had 200,000 men at his disposal, made the costly mistake of directing an attack on Napoleon's extreme right, and for this purpose a force of 35,000 men was detailed to operate in the swampy ground to the west of the Pleisse in what turned out to be a veritable cul-de-sac, while at the same time the centre of the allies was greatly weakened. The battle began about nine o'clock in the morning of October 16 with a tremendous cannonade, which caused fearful havoc in both armies, owing to their compact formation. The fighting was desperate along the entire line. The village of Markkleeberg was taken four times by the Prussians under Kleist and retaken by Poniatowski; at Wachau the Russians under Barclay de Tolly fought with consummate courage, but after six charges were driven back with loss. An attempt to turn the French left likewise failed. Pursuing his advantage, Napoleon directed a fierce cannon fire against the enemy's centre, and followed this up with a charge of 8000 cavalry supported by the infantry corps of Victor and Lauriston. The French horse broke through the first lines of the enemy and advanced almost to the foot of the hill from which the Emperor Alexander and Frederick William III of Prussia were watching the progress of the battle. Here, however, the Cossacks and the infantry of the guard made a desperate stand, and the French, threatened besides by a renewed attack on their right, delivered by the Austrian troops, who had finally been recalled from their useless expedition to the other side of the Pleisse, retreated to their original position. Had Napoleon received reinforcements in time from Ney, the victory would

have been assured; but Ney, after dispatching one of Marmont's corps to the support of Napoleon, recalled it on becoming aware of the approach of Blücher, with the result that valuable time was lost in marching and countermarching, and this division was able to render aid neither to Napoleon nor to Marmont. The latter, who had now about 20,000 men at his disposal, was attacked in his position at Möckern by the superior force of Blücher, and after desperate fighting, in which the French lost 4000 men and the Prussians 5500, was compelled to retreat. At Lindenau Bertrand held his own against the Austrians under Gyulai.

On the 17th, a Sunday, there was no fighting except to the north of the town, where Blücher forced his way nearer to the town walls. Napoleon proposed an armistice to the Austrian Emperor, but received no answer from the allies, who were encouraged by Blücher's victory and expected to renew the contest on the following day with their forces increased to about 280,000 men by the arrival of a Russian army of 40,000 men under Bennigsen, two Austrian divisions under Colloredo, and the Army of the North under Bernadotte. Though all hope of victory was gone, Napoleon, whose forces after the arrival of Regnier amounted to about 150,000 troops, inexplicably neglected the opportunity to effect his retreat by the way of Lindenau, and contented himself with drawing his lines closer to the town, swinging his army slightly to the north so as to form a curve facing almost due east. To the north on his extreme left was Ney, between whom and Macdonald was the corps of Regnier with the Saxon troops, the centre was held by Victor, Lauriston, and Augereau, with the Old and the Young Guard and Murat's cavalry; on the right were the Poles under Poniatowski.

On the 18th the right and centre of the French held their own against the divisions of Colloredo, Kleist, and Wittgenstein, the fighting being especially obstinate around the villages of Probstheida, where Napoleon held command. The village of Stötteritz was bravely defended by Macdonald against the troops of Bennigsen. But on the left Ney could not hold out against the forces of Blücher, Bagration, and Bernadotte, and at a critical moment the Saxons in Regnier's corps stationed at Paunsdorf went over to the enemy. This was the turning point of the battle. Ney was forced to fall back on the town, in spite of reinforcements dispatched by Napoleon. The retreat, however, was stubborn, though in the face of a tremendous cannon fire, the village of Schönhof being taken and retaken seven times. With nightfall the French retreated into the city, hard pressed by the enemy. There was heavy fighting in the suburbs and at the gates far into the night, and the contest was resumed in the early morning of October 19. On the part of the French no adequate preparations had been made for effecting a safe retreat, and as division after division of the exhausted troops abandoned the defense of the town to join in the line of march, the streets of Leipzig became choked with fugitives, the only means of escape from the town being by a solitary bridge across the Elster. Owing to a misunderstanding of orders, this bridge was blown up by a French sergeant before the rear guard had crossed, and 15,000 men were left in the hands of the enemy. Large numbers were drowned in attempting to swim the Elster,

among these being Prince Poniatowski. At noon the allied monarchs made their entry into Leipzig. The losses of the allies in the battle are estimated at about 53,000 in dead and wounded, of which the Prussians lost 16,600, the Austrians 14,500, and the Russians 21,900. The French lost 15,000 in dead, 15,000 wounded, 25,000 prisoners, and 23,000 men left behind in the hospitals. The battle of Leipzig effectively shattered the power of Napoleon, and though his genius never shone more brightly than in his masterly retreat across Germany and his defense of the frontier of France, his fall had been rendered inevitable by the issue of this battle. Consult: Henri Jomini, *Life of Napoleon*, vol. iv (New York, 1864); Leopold Gerlach, *Die Schlacht bei Leipzig* (new ed., Leipzig, 1892); Friedrich Richter, *Historische Darstellung der Völkerschlacht bei Leipzig* (Hamburg, 1897); F. N. Maude, *The Leipzig Campaign, 1813* (London, 1908); Ernst Barkowsky, "Die Leipziger Schlacht und die Leipziger nach zeitgenössischen Berichten," in Albert Mundt, *Die Freiheitskriege in Bildern* (Munich, 1913).

LEIPZIG, COLLOQUY OF. An attempt in the first half of the seventeenth century to reconcile Lutherans and Calvinists. A conference was proposed by the theologians of Hesse and Brandenburg to those of Leipzig. The Elector John George of Saxony having sanctioned the plan of a private conference, the meetings commenced March 3, 1631, at the residence of the upper court preacher and, under his presidency, were held daily until March 23. The Confession of Augsburg (q.v.) was adopted as a basis, and every article examined separately. They agreed on articles V to VII and XII to XXVIII, but differed as to III, the Lutherans maintaining that not only the divine but the human nature of Christ possessed omniscience, omnipotence, etc., by virtue of the union of the two natures in His person, and that the glory which Christ received was only by His human nature; the Reformed theologians, on the contrary, denied that Christ, as man, was omniscient and omnipresent. On the tenth article they could not agree, the Reformed denying the physical participation in the body and blood of Christ in the eucharist, and asserting a spiritual participation by faith. On the article concerning election, the Reformed based election on the will of God, and reprobation on the unbelief of man, while the Lutherans regarded election as the result of God's prescience of the faith of the elect. The colloquy was conducted with ability and moderation, and showed that there was more unity between the two bodies than had been supposed, but no permanent political benefit resulted. Consult Schaff, *Creeds of Christendom*, vol. i (New York, 1881).

LEIPZIG, UNIVERSITY OF. After Berlin and Munich, the largest university of Germany, and next to Heidelberg the oldest within the limits of the present German Empire. It was established by the secession of the German students from Prague as one of the results of the Hussite agitation there. (See PRAGUE, UNIVERSITY OF.) The reorganization of that university in 1409 in favor of the Bohemian and at the expense of the German element led to the secession of the Germans, most of whom, with 40 teachers, accepted the invitation of Frederick the Quarrelsome of Meissen and his brother William and settled at Leipzig, establishing there a university modeled on that of Prague. Two colleges

or houses, the *collegium majus* and the *collegium minus*, were provided by the rulers, and the students were divided into four nations—Meissen, Saxony, Bavaria, and Poland. The humanistic movement here was early popular, and later the Reformation affected the university greatly, as it came under the influence of Melancthon about 1539. The promulgation of the statutes of 1559, which greatly lowered the standards of the institution, closed the period of prosperity, and the university changed little from that time till 1830. As a result, this was a time of almost entire stagnation. Since the thorough reorganization in the latter year, however, Leipzig has taken the high rank it now holds among the German universities. In 1909 the university celebrated its five hundredth anniversary. It had, in the summer semester of 1913, 5171 students in theology, law, medicine, and philosophy, the greater number being in law and philosophy. Besides a large number of university institutions, clinics, museums, collections, laboratories, and the like, there are a number of private institutes and clinics available for students. The library contains 570,000 volumes and 6000 manuscripts. A new governing body for the university, the *syndicate*, was established in 1893. Consult W. Bruchmüller, *Der leipziger Student, 1409-1904* (Leipzig, 1909), and F. Eulenberg, *Entwicklung der Universität Leipzig in den letzten hundert Jahren* (ib., 1909).

LEIPZIG INTERIM. See INTERIM

LEISEWITZ, Iŕze-vits, JOHANN ANTON (1752-1806). A German dramatic poet, born in Hanover. He went to Göttingen in 1770, to study law, and became a member of the circle of poets called Der Hainbund, which included Hölty, Stolberg, and Voss, and contributed two poems to the Göttingen *Musenalmanach* for 1775, both essentially dramatic and democratic in tone. In 1775, at Brunswick, and later at Berlin and Weimar, he met and soon counted among his friends Eschenburg, Mendelssohn, Lessing, Nicolai, Herder, and Goethe. His single complete play, *Julius von Tarent* (1776), an unsuccessful competitor for the now celebrated Ackermann-Schröder prize, was written in Lessing's style and quite in accord with the latter's dramatic technique. The play was a favorite of Schiller, and was frequently acted in Germany. His complete works with biography by Schweiger were published at Brunswick (1838). Consult: Eugene Sieske, *Die hamburger Preiskonkurrenz von 1775* (Brunswick, 1875); R. M. Werner, *Julius von Tarent und die dramatischen Fragmente von J. A. Leisewitz* (Heilbronn, 1889); G. Kraft, *J. A. Leisewitz* (Altenburg, 1894).

LEISHMAN, Iesh'man, JOHN G. A. (1857-). An American diplomat and iron manufacturer, born at Pittsburgh, Pa. After leaving a local Protestant orphan asylum he was employed by the Schoenberger Steel Company, where he thoroughly learned the details of the iron industry. He accumulated a considerable fortune, was the senior member of Leishman and Snyder, steel brokers, from 1881 to 1886, in the latter year was made vice president of Carnegie Brothers and Company, and in 1897 was promoted to the presidency of the reorganized Carnegie Steel Company. In the same year he retired from business and was appointed by President McKinley Minister to Switzerland. In 1900 he was transferred to Turkey. Possibly his most interesting diplomatic experience occurred when in 1904 he presented the demand

of the United States that American citizens and schools should have the same rights and privileges in Turkish dominions as were granted to certain favored nations, and that the American Minister should have direct access to the Sultan. He conducted the negotiations with tact and success. In 1906 his grade was raised to that of Ambassador. Leishman was transferred by President Taft to the more important post of Ambassador to Italy in 1909 and, in 1911, to that of Ambassador to Germany. At Berlin, where he remained until his retirement in 1913, he took a prominent part in the social life of the capital and departed from the custom of most American diplomats by appearing at state functions in elaborate court dress. One of his daughters married the Duke of Croy, and the other Count Louis de Gontant-Biron and afterward James Hazen Hyde (q.v.).

LEISLER, *lis'ler*, JACOB (?-1691). A character prominent in the history of Colonial New York. He was born in Frankfurt, Germany, and in 1680 came to New Amsterdam as a soldier in the Dutch West India Company's service. Leisler's importance in history is due to the part he played in New York affairs in the three years following the English revolution in 1688. On May 13, 1689, the New York militia, following the example of Massachusetts, which had imprisoned Andros, rose against Lieutenant Governor Nicholson, and the three royal councilors resident in New York seized the government for William and Mary and chose a committee of safety, at the head of which was Leisler, who was appointed commander of the fort. Leisler at once set vigorously to work putting the town in condition to resist an expected attack from the French. One of his acts was to construct a new half-moon battery on the spot which has since taken the name of the Battery. On December 9 a letter from the new government in England addressed to Nicholson, or, "in his absence, to such as for the time being take care for preserving the peace and administering the laws in the said Province of New York," was delivered to Leisler. Taking this letter as his authority, Leisler assumed the title of Lieutenant Governor, appointed a council, chose Jacob Milbourn as secretary, and proceeded to carry on the government partly in accordance with the old Dongan charter. A number of the most influential inhabitants, especially those who had held office under the Andros régime, opposed Leisler, and some of them fled to Albany, which for a time held out against his authority; but after the destruction of Schenectady (Feb. 19, 1690) by the French and Indians, submitted to him. Thus for a time he was supreme in the Colony, and some of his most violent enemies were imprisoned. In May, 1690, by his invitation, the first intercolonial congress that had ever assembled met in New York and planned an expedition against Canada, which, however, was unsuccessful. In January, 1691, Captain Ingoldsby, who sailed from England with Sloughter, the new Governor, but had been separated from him at sea, arrived in the Colony and, although his commission did not give him authority to act as Governor, demanded possession of the fort and of the government. With this demand Leisler refused to comply, and some blood was shed before Sloughter himself arrived in March. As soon as he was convinced of the new Governor's authority, Leisler surrendered; but, at the instigation of Leisler's ene-

mies, Sloughter convened a special commission of oyer and terminer, which condemned Leisler, his son-in-law Milbourn, and eight others to death. The prisoners were reprieved for a time, but at length Sloughter was prevailed upon to sign the death warrants of Leisler and Milbourn, and on May 11, 1691, they were hanged. Four years later, however, the son of Leisler prosecuted an appeal in England and succeeded in getting the confiscated estates restored and the bill of attainder reversed. But for many succeeding years the political life of the Colony was divided into the Leisler and the anti-Leisler factions. Consult: Hoffman, *The Administration of Jacob Leisler*, in Jared Sparks, "Library of American Biography," vol. xiii (Boston, 1844); vol. ii of the *Documentary History of the State of New York* (Albany, 1842-51); J. R. Brodhead, *History of the State of New York* (New York, 1853-71); "Documents relating to the administration of Jacob Leisler," in *Collections of the New York Historical Society for the Year 1868* (New York, 1868); Mrs. Schuyler Van Rensselaer, *History of the City of New York in the Seventeenth Century*, vol. ii (ib., 1909).

LEIST, *list*, BURKARD WILHELM (1819-1906). A German jurist, born at Westen, in Hanover. He was educated at Göttingen, Heidelberg, and Berlin; was made professor of civil law at Basel (1846) and later at Rostock (1847), whence he went to the University of Jena (1853). A pupil of Savigny, he combined the historical method with analysis, and after studies on the fundamental material of law, especially Roman law, made valuable researches in the hypothetical field of Indogermanic law. His more important writings are: *Die Bonorum Possessio, ihre geschichtliche Entwicklung und heutige Geltung* (1844-48); *Civilistische Studien auf dem Gebiet dogmatischer Analyse* (1854-77); *Mancipation und Eigentumsstradition* (1865); *Versuche einer Geschichte der römischen Rechtssysteme* (1850); *Der römische Erbrechtsbesitz* (1871); *Altarisches Jus Gentium* (1889); *Altarisches Jus Civile* (1892-96).

LEITÃO, *lâ-ê-toun'*, J. B. DA SILVA. See ALMEIDA-GARRETT, VISCOUNT OF.

LEITER, *lit'er*, JOSEPH (1868-). An American capitalist, born in Chicago. He graduated from Harvard University in 1891 and then was an agent for his father, Levi Zeigler Leiter, until 1898. In the autumn of 1897 he bought an immense quantity of wheat, causing the price of that commodity to double and affecting grain traders throughout the world. Ultimately, unable to maintain his corner, he lost more than \$10,000,000. He became president of the Zeigler Coal Company and of the Chicago, Zeigler, and Gulf Railway Company and director of other corporations.

LEITER, LEVI ZEIGLER (1834-1904). An American capitalist, father of Joseph Leiter. Born at Leitersburg, Washington Co., Md., he became a clerk in a country store; was employed in a store at Springfield, Ohio, in 1854-55; and then became an employee and later partner in the dry-goods firm of Cooley, Wadsworth & Co. at Chicago. In 1865 he and Marshall Field sold their interests in that firm and bought a controlling share of the dry-goods business of Potter Palmer, which became the firm of Field, Palmer and Leiter, and later Field, Leiter & Co. In 1881 Leiter sold his interest and retired from mercantile business to devote himself there-

after to large real-estate improvement schemes and to various corporate interests.

LEITH, lēth. An important burgh of Scotland, in Edinburghshire, on the Firth of Forth, 2 miles north of the city of Edinburgh, with which it is connected by a continuous line of houses, and of which it is the seaport (Map: Scotland, E 4). It is divided by the Water of Leith into two parts, North Leith and South Leith, and extends along the firth for more than 3 miles. Leith is irregularly built and dingy, especially in the older and central parts; but the Trinity House, customhouse, town hall, royal exchange, corn exchange, and banks are handsome buildings. The city has a government navigation school. West of the city is Leith Fort (1779), an important artillery station, and the fishing village of Newhaven is situated within the port boundaries. Leith combines with Edinburgh in the provision of water and gas, it maintains electric lighting, baths, a municipal lodging house, a fire brigade, slaughterhouses, and public parks. Leith is the chief seaport on the east coast of Scotland. The harbor extends by means of two piers upward of a mile into the firth and has a depth of about 25 feet at high water. There are six dry docks and an equal number of wet docks. The total water area of the docks and harbor is 80 acres. Railway communication is continued from the various Leith stations to the quays and even to the extremity of the western pier, and across the harbor by an iron swing bridge. The chief manufactures are ships, machinery, sailcloth, ropes, ale, rectified spirits, soap, bottles, and flour. The trade of the port is chiefly in colonial and foreign produce, but is also extensive in coal and iron exports. The city is especially important for its trade in whisky and its fishery interests. Grain, timber, and wine are . . . leading imports. A large part of the . . . trade is with Hamburg and Danish, Dutch, and Belgian ports. In 1900 imports and exports were valued at £12,931,781 and £5,297,991 respectively, in 1910, £13,559,655 and £6,970,509, in 1912, £16,531,420 and £8,106,811 (of which £7,929,078 domestic and £177,733 foreign and colonial). In the foreign and colonial trade the tonnage entered and cleared in 1900 was 2,037,700; in 1910, 3,220,683; in 1912, 3,406,614. Leith is an ancient town, and its history is largely connected with that of Edinburgh. It is first mentioned, in the charter of Holyrood Abbey (1128), as Inverleith. It early rose to commercial importance, the . . . industry dating from 1313. In 1511 it . . . a very monstrous Great ship, ye Michael," for James IV. It was walled and fortified in 1549. Some of the walls and a Saxon archway remain of the citadel built in 1650 by Oliver Cromwell's forces and destroyed after the Restoration. Pop, 1901, 77,439; 1911, 80,488. In population it is the seventh city in Scotland. Area, 1517 acres. Leith, with Musselburgh (pop., 1911, 15,486) and Portobello (11,037), is represented in Parliament by one member. Consult: R. H. Stevenson, *Annals of Edinburgh and Leith* (Edinburgh, 1839); J. C. Irons, *Leith and its Antiquities from the Earliest Times to the Close of the 19th Century* (2 vols., ib., 1898).

LEITH, CHARLES KENNETH (1875-). An American geologist. He was born at Trempealeau, Wis., and was educated at the University of Wisconsin (B.S., 1897; Ph.D., 1901), where he was assistant professor of geology

(1902-03) and thereafter professor. He served as an assistant geologist on the United States Geological Survey in 1900-05 and lectured at the University of Chicago after 1905 on pre-Cambrian geology. He is author of *A Summer and Winter on Hudson Bay* (1912) and *Structural Geology* (1913).

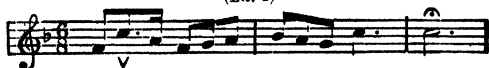
LEITHA, lit'a. A river of Austria-Hungary, an affluent of the Danube. It is formed by the junction of two little streams, the Schwarza and Pitten, near Neustadt, in Lower Austria, and flows in a northeasterly direction, separating (for a short distance) Austria from Hungary (whence their respective names Cisleithania and Transleithania). Passing into Hungary, the Leitha turns southeast and joins the Raab, a right-bank tributary of the Danube, at Altenburg. The total length of the river, from the source of the Schwarza, is over 110 miles.

LEITMERITZ, lit'mēr-its. An old town of Bohemia, Austria, on the right bank of the Elbe (which here becomes navigable), 45 miles north-northwest of Prague (Map: Austria-Hungary, D 1). It has a seventeenth-century cathedral, an episcopal palace with library, an old Rathaus (now used as a courthouse), an industrial museum, and a new Rathaus. The educational institutions include a higher Gymnasium, a training school for teachers, a school of theology, and a school for instruction in cultivation of grain and fruit. Leitmeritz has manufactures of glass, leather, chalk, bricks, cement, beer, and malt. There is a flourishing trade in wine, fruit, and hops. Pop, 1900, 13,075; 1910, 15,421.

LEITMOTIV, lit'mō-tēf' (Ger., leading motive). A term originated by Hans von Wolzogen and applied to the musical phrases which constitute the basic material out of which Wagner constructed his musical dramas. (See MUSICAL DRAMA.) Weber had used so-called *typical phrases* (q.v.), the object of which was to recall a similar situation. In the works of his second period (*Dutchman*, *Tannhäuser*, *Lohengrin*) Wagner makes extensive use of the typical phrase. The phrases characterizing the Dutchman, or *Lohengrin's* warning phrases, are heard repeatedly, but they undergo no organic changes, i.e., they are always literal repetitions, even if the instrumentation is varied. It was in Florence that Wagner first conceived the idea of expressing the chief personages and situations of his dramas by means of typical phrases. Any changes of states of the persons were to be represented by corresponding changes of the fundamental typical phrase. The whole music was to be thematically developed from these simple motives, which he thus very happily characterized as *leading motives*. Whereas the typical phrase recalled only similar situations, the leitmotiv characterizes, i.e., represents, essential qualities of persons, things, and even abstract thoughts. Wagner's genius for musical characterization enabled him to invent pregnant motives. Thus, he is enabled to give typical musical representations of individual persons (Siegfried, Hunding, Kundry), whole classes of persons (Mastersingers, giants, Nibelungs), forces of nature (storm, fire, forest sounds), mental states (Brünnhilde's ecstasy, pleading, Mime's plotting, Kundry's longing), general emotions (love, sympathy, compassion). From these latter it is but a step to the representation of symbolism (love potion, Tarn-helmet, Ring) and general abstractions (Wall-hall, fate, curse, grail). The leading motives do not occur as mere literal quotations, they un-

dergo vital changes, so as to adapt themselves to the most exacting demands of the dramatic situation. To produce these changes Wagner has recourse to all the technical devices known to musical art: change of harmony, rhythm, melodic intervals, diminution, extension, inversion, contrapuntal combination of two or more themes. Another important means to vary the expression or emotional character of the leitmotiv is the master's marvelous and unerring instinct for instrumental color. As an example, the following motive of the young Siegfried may be taken (Ex. 1). In *Götterdämmerung*, when Siegfried

(EX. 1)



has become a mature man, his motive is as follows—a form clearly evolved from the motive in *Siegfried* (Ex. 2). Compare also the following

(EX. 2)



variations of the *sword motive* (Ex. 3). The reader is also referred to the *Walhalla-motiv* as it first occurs at the opening of scene two in *Rheingold* and the form in which it appears in the closing bars of *Götterdämmerung*. Through this employment of the leitmotiv Wagner is enabled to attain perfect dramatic unity. Hence

ous motives from the beginning of *Rheingold*. Thus it is seen how the principle of the leitmotiv gives organic unity not only to a single drama but even to a whole cycle of dramas. For a full exposition of this subject, consult Richard Wagner, "Ueber die Anwendung der Musik auf das Drama," in *Gesammelte Schriften und Dichtungen* (10 vols., Leipzig, 1897), and H. T. Finck, *Wagner and his Works* (New York, 1898).

LEITNER, lit'nēr, GOTTLIEB WILHELM (1840-99). A German Orientalist, born at Pest, Hungary. His father, a German physician, becoming involved in the revolution of 1849, went to Turkey, where Gottlieb, who had been well instructed in the classics, learned Turkish, Arabic, and modern Greek. He also acquired English, French, and Italian at the British College in Malta and was interpreter to the English commissariat during the Crimean War. After the war he went to London, was naturalized as a British subject, and accepted an appoint-

ment as professor of Arabic and Mohammedan law in King's College (1861). In 1864 he was appointed director of a college at Lahore in the Punjab. He formed many societies, schools, public libraries, and colleges in India, and organized the Punjab University upon a solid basis. He also found time to engage in the exploration of

(EX. 3)



there are no closes or cadences within an act. The leitmotifs make their appearance one after another, are logically developed, run through every act until the climax is reached at the end of the drama. The final scene of *Götterdämmerung*, e.g., is absolutely unintelligible, unless the hearer has followed the development of the vari-

Tibet and the other countries to the north of the Himalayas and aroused interest in Dardistan and its languages. He extended his researches to the dialects of Kabul, Kashmir, and Badakhshan, and sent to the Vienna Exposition an extensive collection of Central Asiatic antiquities. He is said to have been able to speak,

read, and write 25 languages. His principal work, besides numerous contributions to the proceedings of learned societies in England and upon the Continent, was *The Languages and Races of Dardistan* (2 vols., 1867-71, 2d ed., 1877). Among other contributions made by him, there may be mentioned the *History of Dardistan, Songs, Legends, etc.* (1881) and the *History of Indigenous Education in the Punjab since Annexation* (1883). Consult J. H. Stocquelier, *Life and Labors of Dr. Leitner* (London, 1875).

LEITRIM, le'trím. A county in the Province of Connaught, Ireland, which to the north has a short coast line of 3 miles, on the Bay of Donegal (Map Ireland, C 3). Area, 619 square miles, half of which is pasture land. The soil is poor though crops of potatoes, oats, and hay are raised, and some coal is mined. Capital, Carrick on Shannon. The population, owing to a steady " " " " is constantly decreasing. 1841, 155,000; 1901, 69,200; 1911, 63,557, of whom more than 90 per cent are Roman Catholics.

LEIXNER-GRÜNBERG, liks'nēr-grün'bérk, OTTO VON (1847-1907). A German author. He was born at Saar, Moravia, studied at Graz and Munich, and in 1874-76 was on the editorial staff of the *Gegenwart*, at Berlin, and became well known as a critic of literature and art. He wrote *Illustrierte Litteraturgeschichte* (4 vols., 1879-82); *Gedichte* (1877), *Dammerungen* (1886), *Soziale Briefe aus Berlin* (1891); *Sprüche aus dem Leben für das Leben* (1895); *Die Ehrenten* (1901); *Zum Kampfe gegen Schmutz in Wort und Bild* (1904); *Geschichte der deutschen Litteratur* (7th ed., 1906). He also wrote several tales and the novel *Also sprach Zarathustras Sohn* (1897).

LEJEAN, le-zhān', GUILLAUME (1828-71). A French explorer and geographer, born at Plouégat Guérand, Finistère. He devoted himself to the study of Breton history, and in 1850 published *La Bretagne, son histoire et ses historiens*. He then took up the study of geography; traveled extensively in the Balkans (1857-58, 1867-70) and in Egypt and northern Africa (1860-61), was Consul in Abyssinia (1862-63) until driven out by King Theodore, with whom he had fallen into disfavor. He then traveled in western Asia (1865). He wrote: *Ethnographie der europäischen Türkei* (in Petermann's *Mitteilungen*, 1861); *Voyage aux deux Nils* (1865-68); *Théodore II, le nouvel empire d'Abyssinie et les intérêts français* (1865), *Voyage en Abyssinie* (1873). He published valuable maps of European Turkey and of the Nile. Consult Cortambert, *Lejean et ses voyages* (Paris, 1872).

LEJEUNE, le-zhēn', LOUIS FRANÇOIS, BARON (1775-1848). A French soldier and painter. He was born at Strassburg and served as a volunteer in the army of the Republic and as aid-de-camp of General Berthier in the Napoleonic wars. Most of his paintings were done from sketches made on the battlefield. These include: "Marengio" (1801), "Thabor" (1802), "Aboukir" (1804), "Lodi" (1804), "The Pyramids" (1806), "Somo-Sierra" (1810), "Moskova" (1812), and "Chiclana" (1824). Lejeune first introduced lithography into France, in 1806. After the July revolution in 1830, he became director of the Ecole des Beaux-Arts and the Ecole Industrielle of Toulouse. Consult the *Memoirs of Baron Lejeune*, translated by Mrs. Arthur Bell (2 vols., New York, 1897).

LE JEUNE, PAUL (1592-1604). A French Jesuit missionary, who in 1632 was sent to Canada by Cardinal Richelieu. In the same year he wrote a *Briève relation du voyage de la Nouvelle France* (1632), the first of the collection known as the *Relations des Jésuites en la Nouvelle France*. He became superior of the Jesuit house in Quebec, and edited every year from 1633 till 1639 a *Relation de ce qui s'est passé en la Nouvelle France* (Paris, 1634-40). On his return to France in 1640 he was made procureur of foreign missions. His narrative is included in R. G. Thwaites, *The Jesuit Relations* (Cleveland, 1896-1901).

LEKAIN, le-kān', HENRI LOUIS (1728-78). The stage name of Henri Louis Cain, a French tragedian. He was born in Paris, established a private theatre, and with Voltaire's help became popular, and finally appeared at the Théâtre Français through the intercession of Louis XV. His voice and figure were bad, but study greatly improved the former, and his sympathetic power soon won him great success and a place among the most famous French tragic actors. His *Mémoires* were reprinted in Paris, under the direction of Talma, in 1825.

LEKEU, le-kē', GUILLAUME (1870-1894). A Belgian composer, born at Heusy, near Verviers. After graduation from the conservatory at Verviers he went for further study to César Franck and Vincent d'Indy and won the second Prix de Rome with his lyric scene *Andromède*. His early works exhibit talent of a very unusual order, and through his untimely death Belgium was deprived of one who unquestionably would have risen to a place among her most distinguished composers. His works consist of two symphonic studies for orchestra; an orchestral fantasy on two folk songs of Angers; an adagio for cello and orchestra; a piano trio, a sonata for violin and piano; and a number of unfinished works in the larger forms. A string quartet was completed by D'Indy.

L. E. L. The initials and nom de plume of Letitia Elizabeth Landon, later Mrs. Maclean.

LELAND, CHARLES GODFREY (1824-1903). An American poet, journalist, humorist, and miscellaneous writer, born in Philadelphia, Aug. 15, 1824. Some years before his graduation at Princeton, in 1845, his precocious talent had found voice in short poems contributed to the newspapers. After graduation he studied at Heidelberg, Munich, and Paris, and was one of the American deputation to congratulate the French Provisional Government on the revolution of 1848, in the course of which he joined the students of the Latin Quarter behind the Paris barricades. In that year he returned to Philadelphia, studied law, was admitted to the bar in 1851, continued to write for periodicals, and soon devoted himself entirely to literary and journalistic work. He made a special study of the Gypsy language and history and attained much reputation both as a German scholar and as a portrayer of German and German-American life. Leland's widely read *Hans Breitmann's Ballads* (1871; many later eds.) tells, in the patois called Pennsylvania Dutch, many humorous conceits and droll adventures of their clownish hero. Leland himself was sometimes spoken of as Hans Breitmann. He wrote, however, under his own name. Leland's editorial work took him for a time to New York, but he returned to Philadelphia in 1855, and in 1861 established in Boston the *Continental*

Magazine, in which he pleaded for the emancipation of the slaves. He soon returned again to Philadelphia, however; traveled in the Middle West, and was from 1869 to 1880 resident chiefly in London, pursuing Gypsy studies. Returning to Philadelphia, he was active in furthering industrial-art education in the public schools, and wrote for this purpose several manuals, after his visit to the United States in 1880; but thenceforward he lived in Europe and he died in Florence, Italy, March 20, 1903. His published volumes comprise, among others: *The Poetry and Mystery of Dreams* (1855); *Meister Karl's Sketch Book* (1855), sketches of foreign travel; *Pictures of Travel* (1856), the first of his translations of Heine; *Sunshine in Thought* (1862); *Heine's Book of Songs* (1862); *Legends of Birds* (1864); *Hans Breitmann's Ballads*; *Hans Breitmann About Town and Other New Ballads*; *Hans Breitmann in Politics*; *Hans Breitmann and His Philosopher*; *Hans Breitmann's Party, with Other New Ballads*; *Hans Breitmann as an Uhlán* (1867-70). A complete edition of all the *Ballads* was issued in 1871, and many later editions have appeared. Other of Leland's writings include: *The Music Lesson of Confucius* (1870), philosophic verses; *Gaudeamus* (1871), humorous songs translated from the German; *Egyptian Sketch Book* (1873); *English Gypsies and their Language* (1873); *English Gypsy Songs* (1875, in collaboration); *Fu-Sang, or the Discovery of America by Chinese Buddhist Priests in the Fifth Century* (1875); *Abraham Lincoln* (1879); *The Minor Arts* (1880); *The Gypsies* (1882); *Algonquin Legends of New England* (1884); *Autobiographical Memoirs* (1893); *Songs of the Sea and Lays of the Land* (1895); *Hans Breitmann in Tyrol* (1895); *One Hundred Profitable Acts* (1897); *The Unpublished Legends of Vergil* (1899). His last work was a volume of Indian folklore verses (1903), called *Kulskap the Master, and Other Algonkin Poems*. This was done in collaboration with Dr. John Dyneley Prince. Consult E. R. Pennell, *Charles Godfrey Leland: A Biography* (2 vols., New York, 1906).

LELAND, JOHN (1691-1766). An English divine and Christian apologist. He was born at Wigan in Lancashire, became a Presbyterian minister in Dublin in 1716, and first appeared as an author in 1733 by publishing *A Defence of Christianity* in reply to Tindal's deistical work, *Christianity as Old as the Creation*. In 1739 appeared another apology, *The Divine Authority of the Old and New Testament Asserted against the Unjust Aspersions and False Reasonings of a Book Entitled "The Moral Philosopher"* (by Henry Morgan). He also attacked Henry Dodwell and Bolingbroke. His best work is *A View of the Principal Deistical Writers that have Appeared in England* (1754-56), which once held a high position in Christian apologetic literature. Consult Weld's memoir in Leland's *Discourses on Various Subjects* (4 vols., 1768-89).

LELAND, or LEYLAND, JOHN (c.1506-52). An English antiquary. After a thorough study of the ancient and modern languages at Christ's College, Cambridge, All Souls College, Oxford, and at Paris, he took holy orders, and in 1533 received from Henry VIII the unique office of King's antiquary. In this position he explored the antiquities of the various religious and educational institutions of the Kingdom, and visited every nook and corner of the country for the purpose of examining the topography as

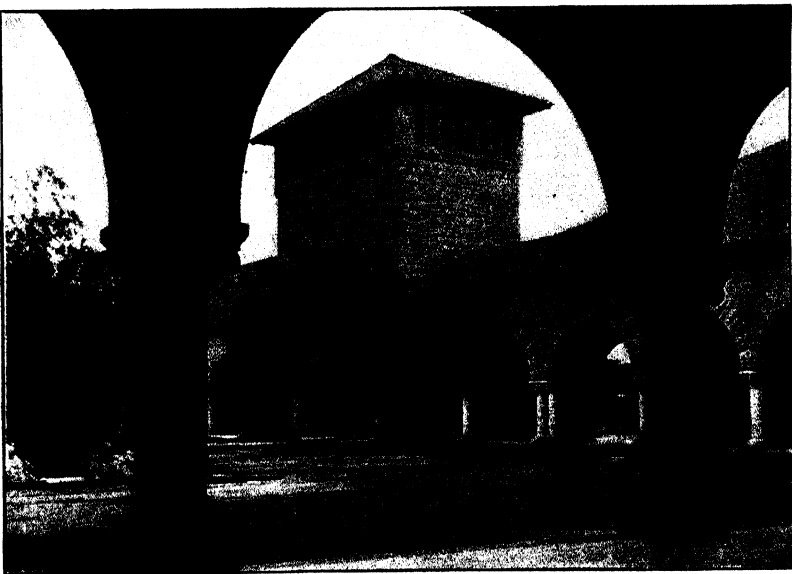
well as the archaeological relics. Though a laborious historian, he was credulous and unsystematic. His principal works were: *A New Year's Gift to King Henry VIII in the 37th Year of His Raygne* (1546); *Commentarii de Scriptoribus Britannicis* (2 vols., 1709); *Itinerary of England* (1710-12); *De Rebus Britannicis Collectanea* (1715). Some of his autographic manuscripts finally made their way into the Bodleian Library, Oxford; others into the British Museum. His labors so overtaxed his mind that during the last two years of his life he was insane. Consult W. Huddesford, *The Lives of those Eminent Antiquaries: John Leland, Thomas Hearne, and Anthony à Wood* (Oxford, 1772), and Burton, *Life of John Leland (the First English Antiquary), with Notes and a Bibliography of his Works, including those in MS., printed from a hitherto Unpublished Work* (London, 1896). *His Itinerary in Wales*, 1536-39, was published in 1906.

LELAND STANFORD JUNIOR UNIVERSITY. A coeducational institution of higher learning at Palo Alto, Cal., founded by Leland Stanford (q.v.) and his wife, Jane Lathrop Stanford, in memory of their only child, Leland Stanford, Jr., who died in 1884. The grant of endowment was made in 1885, the corner stone of the first building was laid in 1887, and the university was opened to students in 1891. The original endowment consisted of about 90,000 acres of land in various parts of California, including the Palo Alto estate of some 9000 acres, constituting the site of the university; the Vina estate of 59,000 acres in Tehama County; and the Gridley estate of 22,000 acres in Butte County. By the will of Mr. Stanford the university received \$2,500,000, and after his death Mrs. Stanford deeded to it almost the whole of the residue of the estate, including the Stanford residence in San Francisco, making the total endowment more than \$25,000,000. The main part of the endowment included in the gifts of Mrs. Stanford consists of interest-bearing securities amounting to about \$17,000,000. The university was in part relieved from the taxation of its property through an amendment to the State constitution ratified in 1900. The university lies 33 miles southeast of San Francisco in the Santa Clara valley, its site covering about 9000 acres, affording views of the Bay of San Francisco and the Monte Diablo and Santa Cruz ranges. The architecture is a modification of the style of the old Spanish missions. The central buildings, of buff sandstone, with roofs of red tile, constitute two quadrangles, one surrounding the other, of which the inner, with the exception of the church, was completed in 1891. Its 12 one-story buildings inclose a court 586 feet long by 246 feet wide. The outer quadrangle, consisting in the main of two-story buildings, connected by an arcade, was begun in 1898. Among the 14 buildings of this quadrangle are the Assembly Hall, the temporary library, and buildings of the departments of science, engineering, economics, history, and English. The museum, chemistry building, dormitories, gymnasium, and university inn, a university commons leased and managed by students, occupy detached structures. The grounds about the university are reserved for experimental and ornamental purposes and for residences of the faculty. Considerable damage was done to the university buildings by the earthquake of April, 1906 (see SAN FRANCISCO

LELAND STANFORD JUNIOR UNIVERSITY



COURT OF INNER QUADRANGLE



A CORNER OF THE INNER QUADRANGLE

EARTHQUAKE), but none of the buildings of the inner quadrangle were injured. The four two-story corner buildings, the one-story physics building of the outer quadrangle, and the chemistry building have been largely rebuilt. The new unfinished library and gymnasium were wrecked, and are to be rebuilt in new locations. There was no injury to books, and very little to apparatus or collections, the architectural features suffering most. The Memorial Church, a structure of Moorish Romanesque architecture, and the Memorial Arch, decorated with a frieze designed by Saint-Gaudens, were completely wrecked, but the restoration of the Memorial Church was completed in 1914. In 1908 the properties and equipment of Cooper Medical College, in San Francisco, were transferred to the university, and with additions and a largely increased teaching force became the Medical School of the university.

The university maintains departments of Greek, Latin, Germanic languages, Romanic languages, English, philosophy, psychology, education, history, economics, law, mathematics, physics, chemistry, botany, physiology, anatomy, bacteriology, medicine, zoology, geology, and mining, and civil, mechanical, and electrical engineering. The Marine Laboratory at Pacific Grove, on the Bay of Monterey, is a branch of the biological department of the university. The degrees conferred are Bachelor of Arts, Master of Arts, Bachelor of Laws, Engineer, Juris Doctor, Doctor of Medicine, and Doctor of Philosophy. No honorary degrees are given. The degree of Bachelor of Arts requires the traditional four years, but the terms "freshman," "sophomore," "junior," and "senior" are not officially recognized, and the degree is conferred without regard to the time spent, whenever the requirements are met. Each student selects as his major subject the work of some one department, to which, together with the necessary minor subjects, he is required to devote about a third of his undergraduate course. All the rest of the undergraduate work is elective, but the professor in charge of the major subject acts as the student's educational adviser, and his approval is necessary for every subject registered. In the matter of entrance requirements the attempt has been made from the outset to insist upon an adequate preparatory training without prescribing particular subjects, and to recognize every subject that has an established place in the secondary school curriculum. The Law School offers a combined six years' course leading to the degrees of A.B. and J.D., the first year of the professional law course counting as the fourth year for the A.B. degree. The degree of Bachelor of Laws (without the A.B. degree) is granted on the completion of the professional three years' law course preceded by two years of general college studies. The degree of M.D. represents a combined eight years' course, the first year in medicine counting as the fourth year for the A.B. degree. The fifth medical year is to be spent in interne work in an approved hospital. The only prescribed requirement for admission is English, counting two units of the 15 necessary for full standing. For the remaining 13 units the student may offer the requisite number selected from a wide range of subjects, to which unit values are assigned. The attendance in 1914-15 was 1879. There were, in 1914, 264 graduate students, and the faculty, including teaching assistants, numbered 229. The li-

brary in 1914 numbered 230,000 volumes, including the medical library, Hopkins railway library, a valuable Australasian library, and a valuable collection of works on Germanic philology and literature. The Leland Stanford Junior Museum is the outgrowth of collections begun by the son of the founders. The control of the institution is vested in a board of 15 trustees appointed for 10 years. The president in 1914 was John Casper Branner, LL.D. Consult E. E. Slosson, *Great American Universities* (New York, 1910).

LELEGES (Lat., from Gk. Λελεγες). In the *Iliad*, a tribe in southwestern Troas, allies of the Trojans. In historic times the name seems to have been applied to a tribe allied to the Carians. Herodotus does not distinguish between the Leleges and the Carians; others declared that they inhabited the coast of Asia Minor north of Ephesus, while the Carians dwelt to the south. Philip of Theangela in Caria (fourth century B.C.) declared that the Leleges were slaves of the Carians. Owing probably to similarity in names, or possibly to dim reminiscences of historic events, a common Greek tradition identified the Leleges (and Carians) with the pre-Greek population of the islands and even the mainland. Some modern scholars use this name, like that of the Pelasgians, to denote the inhabitants of Greece and the islands in the Stone age and in pre-Mycenaean times. Consult: K. M. Deimling, *Die Leleger* (Leipzig, 1862); Wolf Aly, "Karer und Leleger," in *Philologus* (ib., 1908); K. J. Beloch, *Griechische Geschichte*, vol. i (2d ed., Strassburg, 1912-1913).

LELEUX, le-lē, ADOLPHE (1812-91). A French engraver and genre painter. He was born in Paris and began as an engraver and lithographer, but won distinction as a painter. His pictures represent scenes of life of the poor in Brittany, northern Spain, and Algeria, and in the streets of Paris during the revolution of 1848. He received the cross of the Legion of Honor in 1855. His "Portrait of the Author" and "The Command," a scene of the barricades of 1848, are in the Luxembourg.—His brother ARMAND (1818-85), born in Paris, studied under Ingres and in Italy, but turned his attention to genre painting. He had a finer appreciation of picturesque scenes than Adolphe and greater naturalness, but less power of expression. He received a first-class medal in 1859. The Luxembourg Museum contains his "Capuchin Pharmacy in Rome."

LELEWEL, lē-lēv-el, JOACHIM (1786-1861). A Polish historian, geographer, and numismatist, born at Warsaw. He studied at Vilna and became lecturer of history at the university in 1814. Public librarian and professor at Warsaw from 1818 to 1821, he returned that year to Vilna, to his old chair. In 1824 he was dismissed upon suspicion of being engaged in secret revolutionary proceedings and in 1829 was elected a member of the Polish Diet. He was prominent as a leader in the Polish insurrection of the next year, became a member of the national government, and after the failure of the uprising fled to France. He lived in Paris for two years and was then banished for participation in several Polish conspiracies. He went to Brussels and lived there in great privation. His writings are extensive and of high value. Among them are his *Numismatique du moyen-âge* (Paris, 1835); *Géographie des Arabes* (ib., 1851); *Géographie du moyen-âge* (Brussels, 1852-57); *His-*

tory of Poland (1829); *Regenerated Poland* (1836). His political writings in 20 volumes, entitled *Polaka*, appeared in Posen from 1853 to 1876.

LE LOCLE. See LOCLE, LE.

LELOIR, le-lwâr'. A family of French painters.—**JEAN BAPTISTE AUGUSTE** (1809–92), an historical painter, was born in Paris. He was a pupil of Picot and after travels in Italy exhibited at the Salon of 1835. His other early works were "St. Cecilia," "Ruth and Naomi," "Marguerite in Prison," "Young Peasants at the Foot of the Sacred Way," and "Homer," which was acquired by the state. A middle period was occupied by mural paintings in several Parisian churches. Later subjects were a portrait of Henri de Chennevières, "Daphnis and Chloë," "Joan of Arc in Prison," "The Magdalen at the Sepulchre," "Athenians at Syracuse," and "Rinaldo and Armida."

His son, **LOUIS ALEXANDRE** (1843–84), won the second Roman prize in 1861 after study in his father's atelier and at the Ecole des Beaux-Arts. His early works were religious subjects, but later he turned to genre and was an excellent painter of aquarelle. Among his paintings are: "Daniel in the Lion's Den" (Douai Museum), "Temptation of St. Anthony," "Grandfather's Birthday," "The Betrothal," "In his Cups," "The Game of Chess," and two other canvases and three aquarelles in the Metropolitan Museum, New York. Among his exquisitely painted aquarelles is "The Serenade," a fan belonging to the Baroness de Rothschild. He was one of the founders of the Society of French Aquarellists. His careful and spirited illustrations of Molière are also highly esteemed.

Another son, **MAURICE** (1853–), was the pupil of his father and brother. Besides designing illustrations, he painted, and exhibited at the Salon and the exhibits of the Society of Aquarellists: "The Marionettes" (1876), "Voltaire's Last Journey to Paris" (1878), "The Last Sheaf," "The Drink of Milk" (Metropolitan Museum, New York). He excels in depicting the life of the eighteenth century.

LELONG, le-lon', JACQUES (1665–1721). A French cataloguer, born in Paris. He studied at Malta and then in Paris. Afterward he was appointed librarian at the Oratorium of St. Honoré (1699). His reputation rests upon one book, *La bibliothèque historique de la France*, published in 1719 and enriched and republished in 1778. It is a catalogue of all books and manuscripts relative to the history of France and is of great importance to the student of French history. He also arranged a catalogue of all the editions of the Bible, *Bibliotheca Sacra* (1709 and 1723).

LE LOUTRE, le lō'tr', LOUIS JOSEPH (c.1692–c.1775). A French missionary to the Micmacs and vicar-general of Acadia. He was sent to Nova Scotia in 1740. Through the spiritual hold he gained upon the Indians he was enabled to direct their operations against the English forts and settlements; and when the country was taken by the British, he contrived by threats of excommunication, or of massacre by his Indians, to terrify the simple Acadians into remaining loyal to King Louis and covertly fighting for him after they had been subjects of King George for a generation. The misery he brought upon the people reached its climax when the long-suffering English government ordered their deportation (1755). The Abbé Le Loutre

had sought safety in flight at the surrender of Beauséjour, but he was coldly received by the Bishop and brethren at Quebec, and the ship in which he sailed for France was captured en route by the English, who held him prisoner for eight years in the isle of Jersey. On his release he returned to France and died in obscurity.

LELY, lê'lî, SIR PETER, properly **PIETER VAN DER FAES** (1618–80). A Dutch portrait painter, active chiefly in England. He was the son of Johan van der Faes, alias Lely, a captain of foot in the service of the States-General, and was born at Soest—authorities differ whether the town in Westphalia or the village near Utrecht is meant. A pupil of Pieter de Grebber at Haarlem, in 1641, he went to England in the train of William, Prince of Orange, where his portraits of the latter and his bride, Princess Mary, at Haigh Hall, made him well known. He remained in London, and in August, 1647, he painted the striking portrait of Charles I, as well as the double portrait of the King and Prince James while they were prisoners in Hampton Court—both portraits now in Syon House, Isleworth. His reputation and practice were great during the Commonwealth, when he painted the portrait of Cromwell (Pitti Gallery, Florence), and at the Restoration he was named court painter by Charles II. His fortune became such that he was able to advance large sums to King and Parliament. He painted the royal family, the royal mistresses and their children, ministers, and generals, was celebrated in the verses of Pope and other contemporaries, and Pepys in his diary speaks of him as "mighty proud and full of state." Until the arrival of Kneller (q.v.) he was without a rival. He was knighted in 1679 and died in London, Nov. 30, 1680.

Lely's early works are modeled on Van Dyck and are clear and warm in color, the hands being especially well drawn. In later life, when he had become popular, he employed assistants for the draperies and accessories, and his art degenerated. His color became cold and heavy, and his style mannered. He is chiefly famous for his portraits—the fair and frail beauties of the court of Charles II. His best-known work is the series of "Beauties," originally 11 in number, but now reduced to nine, painted for the Duchess of York. They are now at Hampton Court. Another well-known series is that of the "Admirals," 12 in number, painted for the Duke of York. Lely's portraits are best represented at Hampton Court, in the National Portrait Gallery, London, at Greenwich and Windsor, and in many English private collections. The Metropolitan Museum, New York, possesses his portraits of Sir William Temple and an interesting likeness of Nell Gwynne. Consult C. H. C. Baker, *Lely and the Stuart Painters* (2 vols., London, 1912).

LEMAIRE, le-mâr', (JEANNE) MADELEINE, née COLLE (1845–). A French flower, figure, and portrait painter, born at Sainte-Rosoline (Var). She was a pupil of her aunt, Madame Herbelin (a miniature painter), and afterward of Chaplin. Besides her portraits, her floral paintings and pastels are famous, and she made a great success at the Exposition of 1878 with her aquarelles. Among her best-known pictures are "Diana and her Dog" (1869), "Leaving Church" (1872), "Colombine" (1874), "Roses and Peaches" (1878), "Sermon during Mass" (1901), "Roses" (1903), "The

Sleep of Manon" (1906), "The Baths of Chloris" (1907). Among her well-known illustrations are those for Halévy's *L'Abbé Constantin*. Her style is brilliant, her execution correct and vigorous.

LEMAIRE DE BELGES, le-mâr' de bêlzh (1473-c.1525). A French poet, born at Belges or Bavay in the Low Countries (now French territory). An important representative of the early French Renaissance, he gives evidence of what the poetry of the time lacked, a lyric quality, but he is more concise and direct than his predecessors. He was in the service of Margaret of Austria and traveled much in Italy. He wrote the *Épître de l'amant vert*; *Le temple d'honneur et de vertus*; *Concorde des deux langues*; *Couronne margaritique*; and his greatest work, *Illustrations des Gaules et singularités de Troie* (1510-12). He was a precursor of Du Bellay and influenced Rabelais, Marot, and Ronsard.

LEMAÎTRE, le-mâ'tr', ANTOINE LOUIS PROSPER, known as FRÉDÉRIC (1800-76). A celebrated French actor, born at Havre, July 28, 1800. He was educated at the Conservatory, and in 1820 after acting at minor playhouses he appeared at the Odéon, but his fame began when in 1823 he created at the Ambigu the character of Robert Macaire in the melodrama of *L'Auberge des Adrets*. His vigorous and original genius soon made him the idol of the boulevards, where he was the leading attraction in a succession of theatres. To the conventional restraints of the Théâtre Français, however, he could not accommodate himself. He represented on the stage the extreme of the Romantic school. Besides his character of Robert Macaire, which gave the name to a new drama of which Lemaître was joint author in 1834, the record of his achievements includes *Trente ans ou la vie d'un joueur* at the Porte Saint-Martin in 1827, Dumas's *Kean ou désordre et génie*, at the Variétés in 1836, Victor Hugo's *Ruy Blas*, at the Renaissance in 1838, and *Don César de Bazan* and *Toussaint l'Ouverture* later at the Porte Saint-Martin. His last appearance was in 1873, and he died in Paris on Jan. 26, 1876. His career has recently been made the theme of a play by Clyde Fitch. Consult: *Souvenirs de Lemaître, publiés par son fils* (Paris, 1879); Duval, *Lemaître et son temps* (ib., 1876); De Mirecourt, "Frédéric Lemaître," in *Les contemporains* (ib., 1856); Lewes, *On Actors and the Art of Acting* (New York, 1878).

LEMAÎTRE (FRANÇOIS ELIE) JULES (1853-1914). An eminent French critic of the subjective Impressionist school. He was born at Vennezy (Loiret), Aug. 27, 1853, began his career as a teacher at Havre (1875-80), then taught at Algiers (1880-82) and Besançon (1882-83), and was professor at Grenoble (1883-84). He was already author of two volumes of verse and had published some essays and stories when he resigned his post and gave himself altogether to letters. He went to Paris and in three months won distinction by essays on Ohnet, Renan, and Zola. His *Impressions du théâtre* (10 vols., 1888-98) and *Contemporains* (7 vols., 1885-89) group his articles in two series that treat criticism as "a representation of the world, like other branches of literature, and hence by its nature, as relative, as vain, and therefore as interesting as they." This profession of literary faith shows Lemaître to differ from Brunetière,

much as Sainte-Beuve differed from Nisard in the preceding generation. His later critical work—studies of *Rousseau* (1907), *Racine* (1908), *Fénelon* (1910), and *Chateaubriand* (1912)—were first given to the public in lectures delivered at the Société des Conférences. The same unconventionality that is characteristic of Lemaître's criticism marks his plays, some of which have been notably successful: *Revoltée* (1889); *Député Leveau* (1891); *Marriage blanc* (1891); *Les rois* (1893); *Flipote* (1893); *L'Age difficile* (1895); *Le pardon* (1895); *La bonne Hélène* (1896); *L'Ainée* (1898); *La massière* (1905); *Bertrade* (1905); *La princesse de Clèves* (1905); *Le mariage de Télémaque* (1910), with Maurice Donnay. Lemaître also wrote a number of tales: *Sérénus* (1886); *Dix contes* (1889); *Myrrha* (1894), *En marge des vieux livres*, which appeared in 1905, 1907, and 1914; and he contributed to the *Journal des Débats*, *Temps*, *Figaro*, *Gaulois*, *Echo de Paris*, and (frequently) to the *Revue des Deux Mondes*. In 1895 Lemaître was elected to the French Academy, and in 1898 he founded, with François Coppée, La Ligue de la Patrie Française. He died Aug. 6, 1914.

LEMAN, lê'man, LAKE. See GENEVA, LAKE.

LE MANS, le män A city of France. See MANS, LE.

LEMAN'NUS, or **LEMAN'NUS**, LACUS. See GENEVA, LAKE.

LE MARCHANT, le mür'shän', JOHN GASPARD (1766-1812). An English soldier. Appointed ensign in the British army in 1781, he saw service at Gibraltar and in Flanders (1793-94). A favorite of George III, his promotion was rapid to the grade of lieutenant colonel in 1797. He drew up plans for military schools at High Wycombe and Great Marlow, which were adopted by Parliament. Later these schools were combined and removed to Sandhurst, where Le Marchant was lieutenant governor of the institution for nine years. Promoted to major general, he was appointed to a brigade of cavalry in the Peninsula in 1810. He participated in the capture of Ciudad Rodrigo in 1812, and later in the same year was mortally wounded while leading an especially brilliant and successful charge of his brigade at the battle of Salamanca.

LEMARE, lê-mâr', EDWIN HENRY (1865-). A celebrated English organist, born at Ventnor, Isle of Wight. In 1878 he won a scholarship at the Royal Academy of Music, where he studied the organ under Charles Steggall and composition under G. A. Macfarren. When only 19 he was elected a fellow of the Royal College of Organists. Having filled positions at Cardiff and Sheffield, he was appointed to Holy Trinity in London in 1892 and called to St. Margaret's in 1897. In 1902-04 he held the position of organist and director of music at Carnegie Hall, Pittsburgh, after which he returned to England. Subsequently he made several concert tours of the United States, where his art created such a deep impression that he was appointed official organist of the Panama Exposition of 1915. He composed several works for the organ, chief of which is a symphony in G minor, and made numerous transcriptions of orchestral works for his instrument.

LE MARS, lê mürz. A city and the county seat of Plymouth Co., Iowa, 25 miles north by east of Sioux City, on the Illinois Central and the Chicago, St. Paul, Minneapolis, and Omaha

railroads (Map: Iowa, A 2). It is the seat of Western Union College (United Evangelical) and has a Carnegie library. There is considerable trade with the surrounding farming and stock-raising region; and the industrial establishments include large flour mills and manufacturing of flour, blank books, drills, foundry and machine-shop products, brick, cigars, etc. Pop., 1900, 4146; 1910, 4157.

LEMAV, le-mă', LÉON PAMPHILE (1837-). A Canadian poet and novelist. He was born at Lotbinière, Province of Quebec, and was educated at the Quebec Seminary. He studied theology at the University of Ottawa, but was afterward called to the bar (1865), and in 1867 he became librarian to the Quebec Legislature, retiring in 1892 on a pension. He gained fame by his translation into French of Longfellow's "Evangeline" (1870). He was made a fellow of the Royal Society of Canada, and in 1908 contributed a poem on Champlain at the tercentenary celebration of Quebec. His publications include: *Essais poétiques* (1865); *Poèmes couronnés* (1870); *Les vengeancees* (1875); *De pelc- rin de Sainte Anne* (1877); *Fables canadiennes* (1881); *Petits poèmes* (1883); *L'affaire Sou- graine* (1884); *Rouge et bleu* (1891); *Les gou- telletes* (1904), sonnets. See CANADIAN LIT- ERATURE.

LEMBCKE, lēm'b'ke, CHRISTIAN LUDVIG EDVARD (1815-97). A Danish poet, born at Copenhagen. He studied theology, became rec- tor of a Latin school at Haderslev in 1850, and afterward settled at Copenhagen, where he opened another institution of the same kind. He wrote several poems, among which is the popular *Vort Modersmaal* (Our Mother Tongue), but he is best known by his translation of Shake- speare (18 vols., 1861-73; 3d ed., 1897-1900). He also translated Byron (2 vols., 1873-76).

LEMBERG, lēm'b'erk (Polish *Lwów*). The capital of the Crownland of Galicia, Austria, situated on the small stream Peltew, an affluent of the Bug, in a deep valley in a mountainous region, 212 miles by rail east-southeast of Cra- cow (Map: Austria-Hungary, H 2). In popu- lation it is the fourth city of Austria (after Vienna, Prague, and Trieste). It is composed of the small old town, and of the four suburbs which contain most of the prominent build- ings. The ramparts of the old town were replaced by promenades in 1811, but the city is equipped with a citadel. Lemberg is very rich in ecclesi- astical edifices. The chief among them are the Roman Catholic cathedral, built in Late Gothic style in 1350-1479 and adorned with frescoes; the Dominican church (1749), modeled after St. Peter's at Rome, and containing a monu- ment to the Countess of Dunin-Borkowska by Thorvaldsen; the Armenian cathedral (1437) in the Armenian-Byzantine style; the Greek Catho- lic cathedral (1740-79) in the basilica style; the Greek Catholic church of St. Nicholas (1292); the Roman Catholic church of St. Mary (1363); and the new synagogue. Lemberg has also eight monasteries and convents. The town hall, built in 1828-37, is surmounted by a tower 280 feet high and contains an industrial museum. Other prominent secular buildings are the hall of the Landtag (1877-81), the technical high school (1877), the palace of the Roman Catholic Archbishop, the theatre, the industrial museum, and the hospital. Prominent among the educa- tional institutions of Lemberg is the univer- sity. (See LEMBERG, UNIVERSITY OF.) The

most noteworthy of the other educational insti- tutions are the royal technical high school (one of the six in Austria), with an attendance of about 1700 in 1911, five Gymnasias, two theologi- cal seminaries, a school of agriculture and for- estry, a normal training school, and several special schools. The Ossolinski National Insti- tute, with over 180,000 volumes, contains col- lections of Polish historical and literary antiq- uities, portraits, and coins. The municipal mu- seum has art and industrial collections, and the Dzieduszycki Museum is important to the stu- dent of ancient Galicia. In the Skarbek Theatre Polish-Italian operas are sung and Polish dramas performed.

Lemberg is the seat of the chief economic or- ganizations of the crownland, and of archbishops of the Roman Catholic, Greek Catholic, and Ar- menian Catholic churches. It has large banks and commercial institutions. The transporta- tion facilities include an electric railway. Lem- berg manufactures farm machinery, boilers, various other iron products, musical instruments, brick, spirits, kerosene, candles, flour, etc. The trade, very extensive during the Middle Ages, was almost entirely destroyed by the fall of Poland. Within recent years the transit trade has somewhat recovered. The chief articles of commerce include agricultural products and some iron manufactures. The important fair of the three Kings is held every January. The de facto population of the commune in 1900 was 159,877, in 1910 (census of December 31), 206, 113. Of the latter number, 105,469 were re- turned as Roman Catholics, 39,314 Greek Catho- lics, and 57,387 Jews. The vernacular of 85.8 per cent of the population in 1900 was Polish (76.8 in 1900), 10.8 per cent Ruthenian, and 2.9 German (13.0 in 1900). The foundation of Lemberg is usually attributed to the Ruthenian Prince Daniel, who (about 1259) built it for his son Leo, in whose honor it was named (*Leopo- lis*). Captured by Casimir the Great in 1340, it received Magdeburg rights and greatly increased in importance under the Polish rule. It received many German colonists, and for two centuries the German language was used in its public records. It was the capital of a Polish prov- ince from 1432 to 1772, when it passed to Aus- tria. In 1648 and 1655 it was besieged by Cossacks under Chmielnicki, and in 1672 by the Turks. It was captured by Charles XII of Sweden in 1704, and in 1848 was bombarded.

At the outbreak of the European War, in 1914, Russia began an offensive movement against Austrian Galicia. Her battle line extended over a front of about 400 miles. After a month of severe fighting, the Russians under General Ruzsky first occupied heavily fortified positions before Lemberg, and then entered the city itself a few days later, which they subsequently forti- fied. It is estimated that the Austrians lost 25,000 men, 2000 cannon, and a year's provi- sions. Civil government was set up. This victory gave the Russians complete mastery of eastern Galicia. See WAR IN EUROPE.

LEMBERG, UNIVERSITY OF. The third in size of the Austrian universities. As the centre of the Polish learning in Austria, it is a great factor in the Polish national movement, and its lectures, formerly given in German, are now all or nearly all in Polish. It was founded in 1784 by Emperor Joseph II, reorganized in 1817, and began to flourish especially after 1850. It has faculties of theology, law, and philosophy,

besides instructors in medicine. Its library, founded in 1784, contains 232,272 volumes. Its budget for 1913 was 1,248,000 crowns, and the number of students 5186.

LEMER, le-mâr', JEAN BAPTISTE RAYMOND JULIEN (1815-93). A French author and publisher. He was born at Rochefort and studied in Paris. He was a notary's clerk and then worked in a department of the Ministry of Marine (1841-44). In 1848 he began to write for *La Semaine*, *La Liberté*, and *Le Courrier Français*, and soon after founded *La Sylphide* (1853) and *La Lecture* (1848). Under pseudonyms and his own name he published the erotic collections, *Poètes de l'amour* (1850) and *Lettres d'amour* (1852); *Le crime du 18 mars* (1871), *Le moulin de malheur* (1885); *Balzac, sa vie, son œuvre* (1891).

LEMERCIER, le-mâr'syâ'. A family of French architects.—**PIERRE** began work on St. Eustache, Paris, on Aug. 19, 1532, and on Sept. 25, 1552, he received the commission to complete the high tower of the church of St. Maclou at Pontoise. He was succeeded as architect of both these buildings by his son **NICOLAS**, who constructed the nave of St. Eustache in 1578-80.

JACQUES LEMERCIER (1583-1654), probably the son of Nicolas, was one of the remarkable group of architects who, under Louis XIII, transformed French architecture under the influence of new neoclassic ideals. A contemporary of De Brosse, Leveau, and François Mansart (q.v.), he was by far the most prolific and capable designer of his time. After a period of study in Rome he came under the notice of Louis XIII and of Cardinal Richelieu and was employed upon many works of capital importance. For the Cardinal he built the Palais Cardinal, afterward known as the Palais Royal, which was begun in 1629. It has been greatly altered in later times. For the Cardinal he also built the castle and laid out the town of Richelieu, a design of colossal scale, never completed. For the King he began in 1624 an extension of the Louvre, doubling the original court. In this he showed his good taste and restraint by duplicating the ordonnance of Lescot (q.v.) and Gonjon to the north of a new central pavilion, the Pavillon de l'Horloge. Similar self-effacement was shown in his continuing unchanged Mansart's unfinished design for the Val de Grâce, a conventual votive church. His finest works were two churches in Paris—the Sorbonne, begun in 1635, attached to the college of that name begun by him in 1629, and the Oratoire, now a Protestant church on the Faubourg St. Honoré; the first named being the earliest domical church completed in France. His alleged share in the early works at Versailles is mythical, and how far he is responsible for the plan and interior of the fine church of St. Roche is not clearly determined. The imposing open-air stairway of the Cour du Cheval Blanc at Fontainebleau is his work, besides a large number of châteaux and churches of considerable importance.

LEMERCIER, le-mâr'syâ', JEAN LOUIS NÉPOMUCÈNE (1771-1840). A French dramatist and poet, born in Paris. Among the more noted of his dramas are *Tartufe révolutionnaire* (1795), *Agamemnon* (1797), *Ophis* (1798), *Charlemagne*, *Baudoin*, *Saint Louis*, names that suggest classic and historic subjects. He was, however, a reformer a little before the due time, preferring Shakespeare to Racine and making

experiments in stage naturalism, among them an imitation of the storm scene in *The Tempest*. He is interesting solely as a forerunner of the Romantic drama. His poems (*Panhypocrisiade*, 1819; *Les âges français*, and others) are of slight worth. Consult Vauthier, *Essai sur Lemerrier* (Paris, 1886).

LEMERRE, lê-mêr', ALPHONSE PIERRE (1838-1912). A French publisher, born at Canisy. At the time when publishers were publishing cheap books Lemerre was bold enough to depart from this policy and to give to the public beautiful editions of the best authors. He published in this way the *Collection des classiques français* and other collections. These were printed on de luxe paper with wide margins and had distinctive covers. Lemerre's motto *Fac et spera* became well known. The editor of the Parnassian school (see **PARNASSIENS**, **LES**), Lemerre counted as his friends the greatest poets of that group. In later life he published the works of Anatole France, Marcel Prévost, Paul Hervieu, Paul Baudouin, and other leading writers; also the *Bibliothèque contemporaine* and the *Petite bibliothèque littéraire*.

LEMERY, lâ-m'rê', NICOLAS (1645-1715). A French chemist. Born at Rouen, he studied under Christophe Glaser at Paris, lectured at Montpellier, and then became a pharmacist in Paris. In 1683 he was obliged to flee to England on account of his Calvinistic principles; but, abjuring this faith in 1686, he was permitted to return to Paris, where he reopened his pharmacy and thereafter lectured on chemistry as an experimental science. His *Cours de chimie* (1675, 13th ed., 1715) was long a standard work. He is also author of *Pharmacopée universelle* (1697); *Dictionnaire universel des drogues simples* (1698); *Traité de l'antimoine* (1707); *Recueil nouveau des secrets et curiosités les plus rares* (1709).

LEMIEUX, le-myê', RODOLPHE (1866-). A Canadian lawyer and statesman. Born in Montreal, he was educated at Laval University and was called to the bar in 1891. Entering politics, he was a Liberal member of the House of Commons for Gaspé in 1896-1911 and was afterward elected for Rouville. He was Solicitor-General in the Laurier cabinet (1904-06), Postmaster-General (1906-11), and Minister of Marine and Fisheries from August to October, 1911. In 1907 he was special envoy to Japan concerning Japanese immigrants to the Dominion (see **CANADA**, *History*) and in 1910 represented Canada at the opening Parliament of the Union of South Africa. He received the French decoration of the Legion of Honor (1906) and became a fellow of the Royal Society of Canada (1908). At Laval University he was appointed professor of the history of law. He published *De la contrainte par corps* (1896) and *Les origines du droit Franco-Canadien* (1900).

LEMIRE, le-mêr', JULES AUGUSTE (1853-). A French priest and deputy. Born at Vieux-Berquin, he was educated at the College of Saint François d'Assise, Hazebrouck, where he was professor of philosophy and rhetoric from 1878 to 1893. In the latter year he was elected to the Chamber of Deputies, to which he was re-elected in 1898, 1902, and 1906. Interested in social reform, he supported the programme of the Christian Socialists, and in 1897 he founded the league known as the Cœur de Terre et du Foyer, whose object was to procure a piece of land for every French family. He became hon-

orary canon of Aix in 1897 and of Bourges in 1900. His writings include: *Le Cardinal Manning et son action sociale* (1889); *D'Irlande en Australie* (1892); *Que feront les religieuses?* (1903).

LEMMA (Gk. λήμμα, *lēmma*, a thing received, taken for granted, from λαμβάνειν, *lambanein*, Skt. *labh*, *rabh*, to take). In mathematics, a proposition introduced for the purpose of proving another proposition, but not otherwise connected with the general sequence. For example, in treating propositions on collinearity in geometry, in order to prove Pascal's "mystic hexagram" theorem, "The opposite sides of a hexagon inscribed in a conic intersect in three collinear points," it is convenient to approach the proposition through a theorem due to Carnot: "If a circumference intersects the sides a , b , c of a triangle ABC , in A_1 and A_2 , B_1 and B_2 , C_1 and C_2 , respectively, then

$$\frac{AC_1}{C_1B} \cdot \frac{BA_1}{A_1C} \cdot \frac{CB_1}{B_1A} \cdot \frac{AC_2}{C_2B} \cdot \frac{BA_2}{A_2C} \cdot \frac{CB_2}{B_2A} = 1."$$

This latter theorem might, in this treatment of collinearity, be called a lemma. The word is not, however, much used at present, lemmas not being distinguished by name from other propositions in a sequence.

LEMMENS, lēm'ens, NICHOLAS JACQUES (1823-81). A celebrated Belgian organist and composer, born at Zoerle-Parwys. At the age of 11 he began to study the organ with Van der Broeck. From 1841 to 1845 he was a pupil of Fétis at the Brussels Conservatory, which he left as the winner of the first prize in composition and organ playing. In 1846 he went to Breslau, where he studied organ for one year with A. Hesse. After his return he was appointed professor of organ playing at the conservatory in Brussels in 1849. His success as a teacher was extraordinary, and he exerted a far-reaching and lasting influence. In 1879 he established an organ school in Malines, which soon acquired a European reputation. He died at Castle Linterport, near Malines. He wrote several symphonies and masses and a great deal of liturgical music; but his most important works are his compositions for organ, which belong to the standard repertory of every organist.

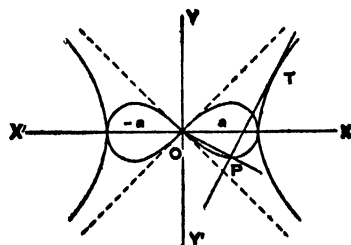
LEMMING (Norw., Swed., Dan. *lemming*, perhaps from Norw. *lemja*, to maim, but more probably from Lapp *loumek*, *lummik*, lemming). 1. A vole, or short-tailed rat (*Myodes*, or *Lemmus*, *lemmus*), of the subfamily Arvicolinae, inhabiting the central mountain chain of Norway and Sweden. Lemmings are about 5 inches long and yellowish brown, marked with darker spots; and their food consists largely of birch shoots, mosses, grass roots and stalks, etc. In winter they form long galleries under the snow in their wanderings in search of food. They make a nest in some sheltered place out of dry grass and hair, and there the young are born, two broods annually, with about five at a birth.

The circumstance which has made the lemming famous is its so-called "migration," the cause of which has never been satisfactorily explained. At intervals, ranging from 5 to 20 or more years, lemmings suddenly appear in enormous numbers in cultivated districts of Norway and Sweden, where ordinarily they do not occur, traveling seaward and not deterred by any obstacle. They swim the streams and lakes which may lie in their path and keep per-

sistently onward, until finally the survivors reach the sea, into which they plunge and so ultimately perish. During this migration all sorts of predatory animals follow in their wake, feasting on the unusual abundance of food, while men also slaughter them, as the damage they inflict on cultivated fields is serious. (See Plate of GOPHERS.) 2. Besides the Norwegian lemming, several related animals are given the same name. One of these (*Myodes obensis*) inhabits the Arctic regions of both hemispheres and is very abundant in northwestern America. It is bright rusty brown in color and is not known to make migrations. Another species (*Myodes schisticolor*) inhabits Siberia and is plain slate gray. A closely related animal, the banded lemming or hare-tailed rat or mouse, is *Cuniculus torquatus*; it is found in the Hudson Bay country and Greenland and is remarkable for turning white in winter. The "false" lemming represents a third nearly related genus, the single species of which, *Synaptomys cooperi*, occurs from Indiana and Kansas northwestward to Alaska. Other American rodents known as lemmings are *Lemmus trimucronatus* and *Dicrostonyx richardsoni*. For these American mice, consult Preble, "A Biological Investigation of the Hudson Bay Region," in *North American Fauna*, No 22 (Washington, 1902), and other publications in the same series.

LEMNIAN EARTH. A soft, yellowish-gray, hydrous aluminium silicate that is found in amorphous masses on the island of Lemnos, now Stalimene. It was valued as a medicine among the ancients, who stamped it with the head of Diana, the tutelary goddess of Lemnos, whence it acquired the name of *terra sigillata* (sealed earth), and was used as an antidote for poison and the plague. It corresponds to the mineral cimolite.

LEMNISCATE (Neo-Lat. *lemniscata*, from Lat. *lemniscatus*, ribboned, from *lemniscus*, from Gk. ληνίσκος, *lēmnikhos*, ribbon, from λήνος, *lēnos*, wool). A curve defined as the locus of a point which moves so that the product of its distances from two fixed points is constant and is equal to the square of half the distance between these fixed points. It may also be defined as the locus of the intersection of the normals from the origin with the tangents to a hyperbola. If the



LEMNISCATE.

equation of the hyperbola is $x^2 - y^2 = a^2$, i.e., if we take an equilateral hyperbola, the equation of the lemniscate is $(x^2 + y^2)^2 = a^2(x^2 - y^2)$. The lemniscate is a special case of the Cassinian oval (q.v.), and its shape resembles that of the figure 8. Its polar equation is $\rho^2 = a^2(\cos^2\theta - \sin^2\theta) = a^2\cos 2\theta$. The curve is symmetric with respect to both coordinate axes, is tangent to the asymptotes of the hyperbola at the origin, lies between the lines $x = -a$, $x = a$,

and is of the fourth order and of the eighth class. (See CURVE.) The lemniscate was invented by Jakob Bernoulli (*Acta Eruditorum*, 1694). Fagnano (1750) discovered its principal properties, but the analytic theory is due chiefly to Euler.

The curves obtained by tracing the loci of the intersection of the normals from the origin with the tangents of curves, other than hyperbolas, are also sometimes called lemniscates; e.g., the curve resulting in case the ellipse is taken as the base is called an elliptic lemniscate. For an extensive bibliography of the lemniscate, consult Brocard, *Notes de bibliographie des courbes géométriques* (Bar-le-Duc, 1897).

LEMNIUS, lēm'nī-ŭs, SIMON (c.1510-50). A German humanist, whose real name was Simon Lemm Margadant, from this family name he was sometimes called Emporicus or Mercatorius. He was born at Münsterthal, studied probably at Munich and in Italy, and under Melanchthon at Wittenberg. His earliest work, published at Wittenberg in 1538, *Epigrammaton Libri Duo*, united invective against many of Luther's followers with eulogy of Luther's enemy, the Archbishop and Elector Albrecht. Lemnius had to leave Wittenberg but in 1538 he published, probably at Halle, a third book of *Epigrammata*. This was answered by Camerarius' *Elegiæ 'Odonomachia'*, and that in turn by an *Apologia* from Lemnius (1542). But his bitterest attack was in the poem *Latit Prætor Jurenalis Monachopornomachia*, which is of uncertain date. In 1540 he was appointed teacher in the new Nikolaischule at Chur, where he died in 1550. His writings, besides those already mentioned, are *Bucolicorum Eclogæ Quinque* and *Amorum Libri Quatuor* (1542); *Homeri Odyssea Heroico Versu Facta, Accedit Batrachomyomachia* (1549); a version in Latin of Dionysius' *Periegesis* (1543); and a *Rhætica*, printed first in 1874. Consult: Lessing, *Kritische Briefe* (Berlin, 1753); G. T. Strobel, *Neue Beiträge zur Litteratur* (Nuremberg, 1792); Plattner, in his edition of the *Rhætica* (1874).

LEMNOS (Gk. Λήμνος; modern *Limnos*). One of the four Thracian islands in the Grecian Archipelago, about 40 miles west of the entrance to the Dardanelles (Map: Greece, G 3). It is irregular in shape, and is divided into two nearly equal parts by two deep bays—Port Paradise on the north and Port St. Anthony on the south. The area is 150 square miles, the population, according to Baedeker, in 1914 was about 30,000. It is hilly, though there are some fertile valleys, rather bare of wood, but produces grain, tobacco, and fruits. There is good pasture ground for sheep. The inhabitants are peaceable and prosperous. The island has been for some time used as a place of exile for political offenders in Turkey. The principal product of Lemnos was formerly the Lemnian earth (q.v.), used in ancient and mediæval times as a cure for festering wounds and serpent bites, and until recently highly valued by both Turks and Greeks, but the ceremonies with which the earth was extracted have been discontinued, and even the knowledge of the earth is likely to be forgotten. The chief town, Kastro (on the site of the ancient Myrina, on the west coast), has a population of about 4000. It has a good harbor, and controls all the trade of the island. It furnishes excellent sailors. Owing to its situation, Lemnos long remained but little influenced by the Greeks. If we may judge from an inscription

found on the island, the pre-Hellenic population was akin to the Etruscans. It was conquered for Athens by Miltiades, tyrant of the Chersonese, occupied by the Persians, and again seized by the Athenians along with Imbros and settled by Athenian colonists. The island was of great importance to Athens, as its possession secured control of the trade from the Black Sea, and it was recognized as Athenian territory by the Peace of Antalcidas. During the Hellenistic and Roman periods the island was not prominent. Later it continued under the rule of the emperors of Constantinople until the capture of that city by the Latin crusaders, when it passed under the control of the Genoese princes of Mitylene. Later it fell into the hands of the Venetians, and in 1478 was surrendered to the Turks. The two chief cities in ancient times were Myrina (now Kastro) and Hephæstra. The latter was situated on the east coast, at a place now deserted, near Palæokastro. Its once fine harbor is now filled up. The ancient writers speak of the island as volcanic and of Mount Moschylos, one of its mountains, as active, and the place was a centre of the worship of Hephæstus. At present there seem to be no evidences of volcanic action, and it is probable that the volcano has sunk in the sea and is now represented by a shoal off the eastern coast. For a famous story connected with the island, see HYPISYPYLE, for another, see PHILOCTETES. Consult: A. Conze, *Reisen auf den Inseln des thrakischen Meeres* (Hanover, 1860); H. F. Tozer, *Islands of the Ægean* (Oxford, 1890); De Launay, *Chez les Grecs de Turquie* (Paris, 1897); C. Frederich, in *Kaiserlich Deutsches Archæologisches Institut, Athensche Abteilung, Mitteilungen*, vol. xxxi (Athens, 1906).

LE MOINE, le mwān. An alternative spelling of the name of several French-Canadian pioneers. See LE MOYNE.

LEMOINE, EMILE MICHEL HYACINTHE (1840-1912). A French mathematician, born at Quimper (Finistère). He was educated at the Ecole Polytechnique, taught for a time, and in his later years was connected with the gas department of Paris. He was one of the founders (1871) of the Société Mathématique de France and established the journal known as *L'intermédiaire des Mathématiciens* (1894). His name is associated with the modern geometry of the triangle, his contributions to the subject having begun in 1873 in his paper "Sur quelques propriétés d'un point remarquable d'un triangle," read before the Association Française pour l'Avancement des Sciences at Lyons.

LE MOINE, SIR JAMES MACPHERSON (1825-1912). A Canadian author and naturalist, born in Quebec. He was educated at Le Petit Séminaire de Québec, and was admitted to the bar in 1850. In 1847 he entered public service as collector of inland revenue at Quebec and in 1869 he became inspector. His writings on early Canadian history gained him a reputation for carefulness of research and for impartiality. He devoted much time to the study of natural history, particularly ornithology, and his contributions in this field also acquired more than ordinary reputation. He was knighted in 1897. His many publications include: *L'Ornithologie du Canada* (1860); *Legendary Lore of the Lower Saint Lawrence* (1862); *Les pêcheries du Canada* (1863); *Maple Leaves* (1863-64); *The Tourist's Note Book* (1870); *Quebec, Past and Present* (1876); *The Scot in New France* (1879);

Chronicles of the Saint Lawrence (1879); *Picturesque Quebec* (1882); *Monographies et esquisses* (1885); *Canadian Heroines* (1887); *Birds of Quebec* (1891); *Legends of the St. Lawrence* (1898); *Annals of the Port of Quebec* (1900); *Maple Leaves* (1906). See CANADIAN LITERATURE.

LEMOINNE, le-mwän', JOHN EMILE (1815-92). A French editor and publicist, born in London, Oct. 17, 1815. He was educated first in England, then in France, and employed in the Ministry of Foreign Affairs. In 1840 he became editor of the *Journal des Débats* and held the post for more than half a century, writing especially on foreign politics and English institutions. He displayed great satiric powers. He became an Academician in 1875 and life member of the Senate in 1880. His numerous publications were of ephemeral interest. He died in Paris, Dec. 14, 1892.

LEM'ON (older forms also *lemmon*, *limon*, *lemond*, from Fr. *limon*, ML. *limo*, from Ar. *limūn*, from Pers. *limūn*, *limū*, lemon), *Citrus medica limonum*, or *Citrus limona*. The common lemon tree or its fruit. The tree is irregular, inclined to make long leaders, clothed sparsely with foliage, and of an average height of 10 to 20 feet. The flowers are purplish on the outside, and their fragrance is less marked and agreeable than that of the orange. The fruit is botanically a berry, ellipsoidal in form, and usually knobbed at the apex or distal end; it is of a light yellow color, and its rind is well charged with oil glands carrying an abundant store of oil. Lemon oil, or extract, is extensively derived from this source, either by expression or distillation, the former process being the common one. The pulp of the lemon is light-colored and well charged with a juice of agreeable flavor, which is mainly due to the citric acid. Aside from its use for making lemonade, it is much used by calico printers to discharge colors, to produce greater clearness in the white part of patterns dyed with dyes containing iron. Citric acid and lemon juice are also made from it in commercial quantities.

The lemon is found wild in India, from whence it was early transported by the Arabs. It reached Europe probably not earlier than the Crusades. It is now extensively cultivated in Italy and the adjacent islands, in Spain and Portugal. In the United States it is planted in Florida and California, but, as it is less hardy than the orange, it is confined to a more restricted area. Since the severe freeze of 1894-95 lemon culture in Florida has been almost entirely transferred to the southern frost-free counties of the State. The soil here is less suited to the plant, and greater skill in mulching and fertilizing is necessary. Orchards are usually planted with trees grown from the bud on the sour orange as a stock, although *Citrus trifoliata*, recently named *Poncirus trifoliata*, can be used. The lemon grows from cuttings, as do the lime and citron. The orchard treatment is the same as for the orange (q.v.). The lemon is very different from the orange in its habit of growth, being more inclined to assume the character of the pear, producing long branches with the fruit at or near the extremity. Close attention to heading-in is therefore a necessity in order to insure the fruit against injury and loss by the wind, as well as for ease in gathering the product.

Since the lemon naturally ripens in winter,

since fruits allowed to mature on the trees do not keep well, and since the great demand for lemons is during the summer months, in order to insure a supply at the desired season the fruit is gathered when it has attained a standard size, though still in a partially developed state. It is kept in dark, cool rooms, where extremes of temperature and drafts can be prevented. When conditions are right, the immature fruit ripens slowly, loses moisture, and the rind becomes thin, tough, and pliable. Such fruits keep and ship well. When removed from the curing room, they are assorted, graded, wrapped in tissue paper, and packed in boxes like those used for oranges. The profit from lemon culture is large. Lemon growing in America has been extended so rapidly in recent years that the home crop is coming into keen competition with the Italian crop. California alone averages an annual crop of about 5000 carloads. The imports amount to about 150,000,000 pounds annually, the value in 1914 being \$5,981,563. Most of the imports are from Italy. See Plate of CITRUS FRUITS.

LEMON, MARK (1809-70). An English journalist, author, one of the founders, and an editor of *Punch*. He was born in London, Nov. 30, 1809. His only schooling was at Cheam in Surrey. When hardly more than a boy, he began writing tales and verse to the magazines. In 1835 the first of his many popular farces was performed at the Strand Theatre. In the course of his long career he was connected with *Household Words*, *Once a Week*, the *Illustrated London News*, and the *London Journal*. He wrote fairy tales, Christmas stories, and longer novels, as *Faulkner Lyle* (1866) and *Leyton Hall* (1867). He was also a successful lecturer and amateur actor. In conjunction with Henry Mayhew (q.v.) he founded *Punch*, the first number of which appeared July 17, 1841. From 1843 till his death he was sole manager. He gathered about him the best humorists of his time, among whom were Douglas Jerrold and Thackeray. Under his management *Punch* became an organ of immense social influence. He died at Crawley in Sussex, May 23, 1870. His well-known *Jest Book* was reprinted for the "Golden Treasury Series" (1892). Consult Hatton, *With a Show in the North: Reminiscences of Lemon* (London, 1871).

LEMON GRASS (so called from the lemon-like fragrance), *Andropogon nardus* and *Andropogon schænanthus*. Beautiful perennial grasses, 3 or 4 feet high, with panicles mostly leaning to one side, and spikelets in pairs, or, if terminal, in threes. They are natives of India, Arabia, etc., and are extremely abundant in many places. Lemon grass is too coarse to be relished by cattle except when young and is therefore often burned down. Europeans in India make an agreeable stomachic and tonic tea of the fresh leaves. By distillation a yellow essential oil, with a strong lemon-like smell, is obtained (lemon-grass oil), which is employed externally as a stimulant in rheumatic affections. It is used in perfumery and is often called oil of verbenia by perfumers. Lemon grass has been introduced into the West Indies, Australia, etc. See ANDROPOGON.

LEMON JUICE. A somewhat turbid sour liquid, obtained from lemons by expression and straining. Its acidity is due to the presence of citric acid, over 5 per cent in the form of free acid and citrates, mainly potassium. Other

acids, malic and phosphoric, occur in small proportion. It also contains some sugar, gum, and inorganic salts. Its physiological action is due to the presence of the alkaline citrates which enter the blood and are oxidized to water, carbon dioxide, and carbonates. Lemon and lime juice have long been used in the treatment of scurvy.

A most attractive cooling drink under the name of lemonade or lemon squash is made from the fresh juice, properly diluted with iced water and sweetened with sugar. See CITRIC ACID.

LEMONNIER, le-mō'nyā', (ANTOINE LOUIS) CAMILLE (1835-1913). A Belgian novelist, born at Ixelles, near Brussels. His earlier writing was in the field of art criticism, e.g., *Les salons de Bruxelles* (1863-66), *Salon de Paris* (1870), and *Les peintres de la vie* (1888). *La Belgique* (1887) received a prize from the Belgian government. His other works are novels, mostly of the Realistic school—*Contes flamands et wallons* (1873); *Un coin de village* (1879), *Les charniers* (1881), based on the battle of Sedan; *Happé-Char* (1886), much the same story as Zola's *Germinal*; and the serial *L'Enfant du crapaud*, the publication of which in *Le Gil Blas* (1889) was stopped and its author fined 1000 francs for immorality. His stories for children include *Bébés et joujoux* (1880), *La comédie des jouets*, and *Les histoires de huit bêtes et une poupée* (1888). Among his later writings are: *Au cœur frais de la forêt* (1900), a novel which has none of the brutality of his earlier work and is marked by unusual descriptive power, *Le sang et les roses* (1900); *Le vent dans le moulin* (1902); *Le petit homme de Dieu* (1903); *Comme va le ruisseau* (1903); *Le droit au bonheur* (1904).

LEMONNIER, PIERRE CHARLES (1715-99). A French astronomer. He was elected a member of the Académie des Sciences in 1736 and in the following year was associated with Maupertuis and Clairaut, at Torneå, in measuring a degree of the meridian in Lapland, within the polar circle. In 1739 he was elected honorary member of the Royal Society of London and for 12 years was its senior member. In 1741 he published *Histoire céleste*. In 1746 and 1748 he made some successful telescopic observations in relation to the planets Jupiter and Saturn and an eclipse of the sun. He held the chair of physics in the Collège de France for many years. In 1746 he published *Institutions astronomiques*, an elementary work. In 1748 he went to England and thence to Scotland to observe the solar eclipse. In 1771 he published *Nautical Astronomy* and various treatises on navigation, magnetism, and the variations of the compass, etc.

LEMON OIL. A volatile oil expressed from lemon peel (sp. gr. 0.857-0.862) and consisting chiefly of the hydrocarbon limonene (about 90 per cent) ($C_{10}H_{16}$) and the aldehyde citral ($C_{10}H_{16}O$), 4-5 per cent. The balance (5 per cent) consists of various aldehydes, terpenes, and esters. Oil of lemon is a fragrant yellow liquid, freely soluble in 95 per cent alcohol and very slightly in water. The oil comes chiefly from the island of Sicily, but is produced in smaller quantities in Spain, Portugal, California, and Australia. Two processes of extraction are used in Sicily—one by hand (sponge methods) and the other by a crude machine press. The hand process is as follows: culls or small inferior fruit are cut in halves and the pulp removed with a spoon. The rinds after soaking

in water are pressed over a shallow earthen bowl, partly filled with water and provided with a rounded wooden crosspiece with notches fitting the greatest diameter of the bowl. The peel is placed in a cup-shaped sponge and pressed against the wooden rest by hand assisted with a short stick, the oil flowing out into the bowl. When sufficient oil collects, it is blown from the bowl into another container. A skilled workman will produce from two to three pounds of oil per diem. Machine-pressed oil, obtained by a very simple hand press, is darker in color than the hand-pressed oil, and is used to tone up the color of pale oil.

Lemon oil is used in the preparation of lemon extract, a flavoring material largely used by confectioners and bakers. The genuine extract contains five parts of oil dissolved in 95 parts of strong alcohol. Terpeneless extract, consisting of citral mainly, is made by treating lemon peel or oil with weak alcohol, whereby the limonene is left insoluble. Such extracts should contain 0.2 per cent of citral. Genuine lemon extract clouds on addition of water, while the manipulated variety remains clear.

LEMONS, SALT OF. A name commonly but improperly applied to acid potassium oxalate.

LE MOUSTIER (lě mō'styä'). **MAN**. See MAN, SCIENCE OF, *Ancient Types*

LEMOVICES, lēm'ō-vi'sēz. See LIMOGES (end); LIMOUSIN.

LE MOYNE, le mwän, ANTOINE, SIEUR DE CHATEAUGUAY (1683-1747). A Canadian officer, and the youngest of the sons of Charles Le Moyne, Sieur de Longueuil. He became an officer in the French army and in 1704 led a party of settlers to the Colony of Louisiana, which had been founded by his brother, Iberville (q.v.). During the next two years he served under his brother against the English and with such distinction that in 1717 he was given command of the French troops in Louisiana. He served against the Spaniards in the Florida campaign of 1719. From 1720 to 1726 he was stationed at Mobile, then recalled to France and sent as Governor to Martinique and later to Cayenne. He was made Governor of Cape Breton in 1745, a year famous in the annals of that station on account of the capture of the fortress of Louisbourg (q.v.) by the New England forces under William Pepperell.

LE MOYNE, CHARLES, SIEUR DE LONGUEUIL (1626-83). A Canadian explorer. He was born in Normandy and when 15 years of age emigrated to Canada, where he and his family of 11 children took part in the early settlement of the country. He distinguished himself in the Indian wars, where he passed through many thrilling adventures and for his services was ennobled by Louis XIV, becoming Seigneur de Longueuil in 1668 and later receiving the additional title of Châteauguay. He was for many years Captain of Montreal. He died at Villemarie, Canada.

LE MOYNE, CHARLES, first BARON DE LONGUEUIL (1656-1729). A Canadian soldier; son of Charles Le Moyne, Sieur de Longueuil, and brother of several other famous soldiers and explorers. He served in the French army in Flanders, but, becoming interested in colonization, returned to Canada in 1683 and devoted himself to developing the resources of that country. He took a prominent part in the defense of Quebec against the English in 1690, was Governor of Montreal in 1700, and fought against Walker's expedition of 1711, in which year he

was appointed commandant general of Canada. In 1726 he obtained from the hostile Iroquois a concession to rebuild the important fort at Niagara, commanding the lower lakes, and was engaged in this work at the time of his death.

LE MOYNE, JACQUES, SIEUR DE SAINTE HELENE (1659-90). A Canadian army officer and the second son of the elder Charles Le Moyne, Sieur de Longueuil. He distinguished himself in an expedition against the English posts on Hudson Bay (1686), on which occasion three forts, a war vessel, and the Governor-General were captured. He also was prominent in the massacre at Schenectady in 1690 and was mortally wounded the same year at Quebec in defending that city against the attack of the English under Admiral Phipps.

LEMOYNE, JEAN BAPTISTE (1704-78). A French sculptor. He was born in Paris and studied under his father (Jean Louis Lemoine) and Robert Le Lorrain. He won the first prize for sculpture in 1725, was appointed a member of the Academy in 1738, professor in 1744, and director in 1768. Lemoine inherited the traditions of Coyzevox (q.v.) and was in his own day much criticized and applauded. His most important works—such as the colossal statues of Louis XV, a monument to the same Prince erected at Rennes, and the tomb of Cardinal Fleury—have been destroyed. His surviving works, among which are the fountain of Neptune at Versailles and the "Baptism of Christ" in the church of St. Roche, Paris, are mannered in style and lacking dignity and force; but his interesting portrait busts in terra cotta and marble, especially those of women, are lifelike, picturesque, and admirably characterized. They include such celebrated contemporaries as Fontanelle (Versailles), Voltaire, La Tour, Crébillon (Dijon Museum), Madame de Pompadour, Mademoiselle Clairon, and Mademoiselle Dangeville (the two last in the Théâtre Français). He also modeled a charming and graceful statue of Madame de Pompadour as "Flora Bathing." Lemoine was known as a successful and kindly teacher.

LE MOYNE, JEAN BAPTISTE, SIEUR DE BIENVILLE (1680-1768). A son of Charles Le Moyne, Sieur de Longueuil, and celebrated as one of the colonizers of Louisiana. See BIENVILLE.

LE MOYNE, JOSEPH, SIEUR DE SÉRIGNY (1668-1734). A Canadian officer and explorer, sixth son of Charles Le Moyne, Sieur de Longueuil. He served against the English in the Hudson Bay country in the early part of his career, but the French possessions to the south were the scene of his most noted exploits. He went with his brother Iberville (q.v.) to Louisiana and made a study of the Gulf coast. For gallant action against the Spaniards at Pensacola and at Mobile, he was in 1723 promoted to be rear admiral and Governor of Rochefort in France, where he passed the remainder of his life.

LE MOYNE, PAUL, SIEUR DE MARICOURT (1663-1704). A Canadian soldier and explorer, fourth son of Charles Le Moyne, Sieur de Longueuil. He became an officer in the French army in Canada and took a prominent part in colonial affairs, his success being largely due to his ability to deal with the Indians. He saw active service against the English in the Hudson Bay expedition of 1686 with his brother Iberville (q.v.) and in the attack on Quebec in 1690. In 1701 he negotiated a peace with the

Iroquois at the close of Frontenac's expedition against them. He was killed in an Iroquois raid upon the stockade fort where he was stationed.

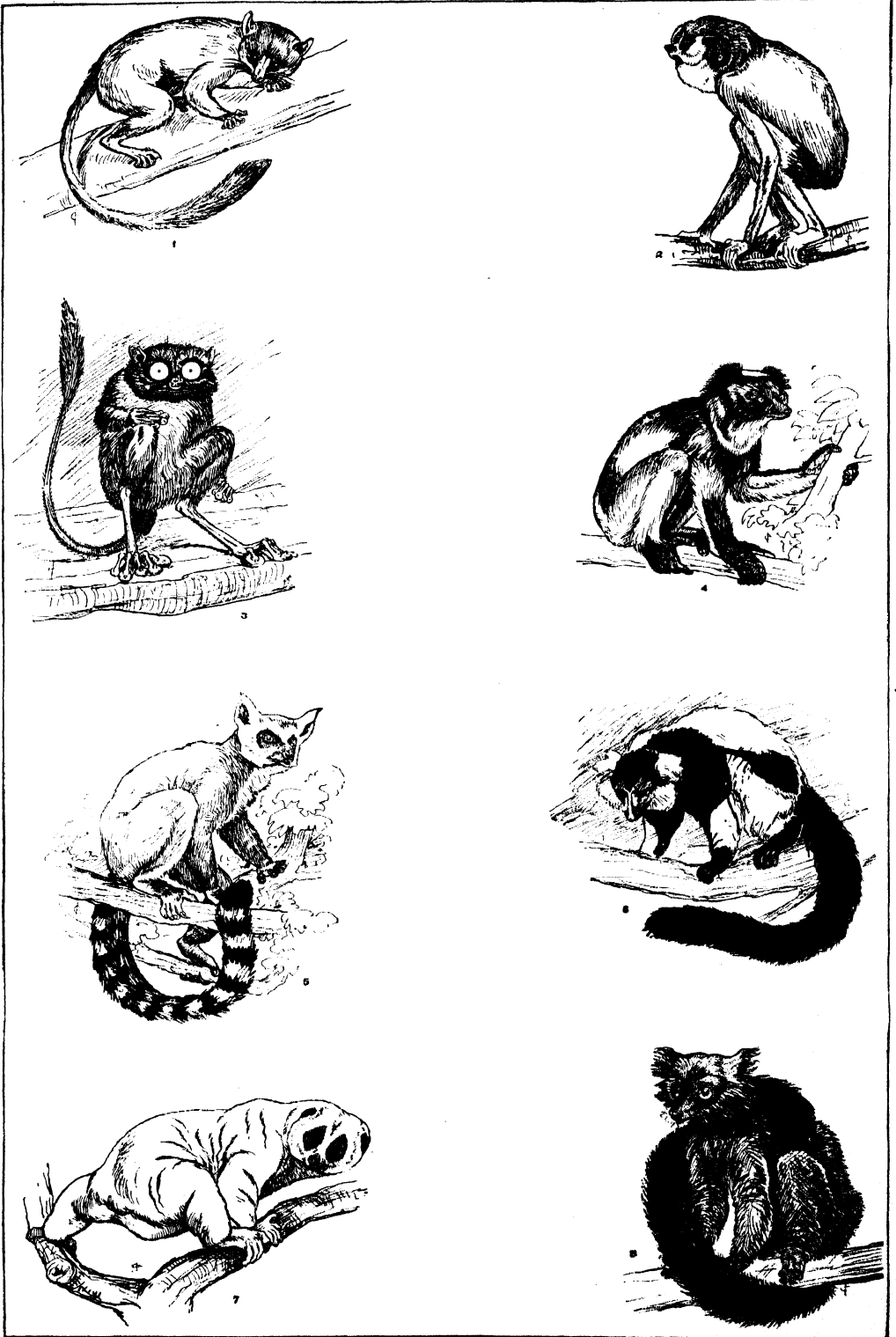
LE MOYNE, PIERRE, SIEUR D'IBERVILLE (1661-1706). A son of Charles Le Moyne, Sieur de Longueuil, and one of the colonizers of Louisiana. See IBERVILLE.

LEM'PA. The principal river of Salvador, Central America. It rises in Lake Guija on the boundary of Guatemala and flows east and south through a fertile and well-populated region, emptying into the Pacific Ocean (Map: Central America, C 4). It is the largest river on the Pacific coast of Central America. Its length is 200 miles; it is navigable for 100 miles for small steamers.

LEMPRIÈRE, lém-prér', JOHN (c.1765-1824). An English classical scholar. He was born in the island of Jersey and studied at Westminster School and at Pembroke College, Oxford, receiving the degree of B.A. in 1790. After taking orders he became head master of schools in Abingdon and Exeter, and later rector of Meeth (1811) and of Newton-Petrock, Devonshire (1823). He is best known as the author of a classical dictionary, the *Bibliotheca Classica* (Reading, 1788; last ed., 1888), which was afterward frequently reprinted in England and in this country. It was founded upon Sabatier's great *Dictionnaire des auteurs classiques* (1766-90) and was itself used by Anthon (q.v.) as the basis of his classical dictionary. Other published works of Lemprière are *Sermons* (1791), a translation of *Herodotus*, first volume only (1792); and a *Dictionary of Universal Biography of Eminent Persons in all Ages and Countries* (London, 1808), enlarged and reprinted by Lord (New York, 1825).

LEMUR (Lat. *lemur*, ghost). Of the many curious animals characteristic of Madagascar, lemurs are perhaps the most interesting. The name was originally bestowed by Linnaeus on account of the nocturnal habits and peculiar ghostlike appearance of the species known to him, and it is still used as the name of the typical genus of the group. But at the present time it is not easy to determine whether all the animals of the suborder Lemuroidea are to be called lemurs or not. The lemuroids (suborder Lemuroidea) differ from all the other primates in certain peculiarities of the skull, hands, and feet, and in the simple structure of the brain, in which the cerebral hemispheres are little convoluted and do not conceal the cerebellum. Yet there is a rudimentary simian fissure. They stand at a lower level than other primates. The head lacks the human expression of the anthropoid apes or even of many monkeys—is more foxlike. The long tail in such as have it is never prehensile, nor is there ever any trace of cheek pouches or of integumental callosities. A curious contrast exists between the monkeys and the lemurs, as Beddard points out, in respect to the digits of the hands and feet. In the former it is the hallux or pollex which is subject to great variation, but in the lemurs the thumb and great toe are always well developed, although the second or the third digit constantly shows some abnormality, such as the remarkable elongation of the third digit in the aye-aye (q.v. for illustration) and in the absence of the index in the potto. In all lemurs, moreover, a sharp claw is borne upon the second toe, unlike the other flat nails. The dentition is peculiar in the way the incisors (four in each

LEMURS



1. MOUSE LEMUR (*Cheirogaleus murinus*).
2. SLENDER LORIS (*Loris gracilis*).
3. TARSIER (*Tarsius spectrum*).

5. RING-TAILED LEMUR (*Lemur catta*).
6. RUFFLED LEMUR (*Lemur varius*).
7. SLOW LEMUR or COMMON LORIS (*Nycticebus tardigradus*).

jaw) are enlarged and project forward, and in the incisor form of the lower canines. There are also important peculiarities in the visceral anatomy. The stomach is simple; the cæcum is always present and of variable lengths, but never has a vermiform appendix. Some of the arteries break up into retia mirabilia, not known elsewhere among primates, but a characteristic of edentates; and a still more remarkable contrast with other primates is the fact that among lemurs the placenta is nondeciduate.

The geographical distribution of the lemurs is extraordinary and has given rise to much speculation. (See LEMURIA.) Two-thirds of the group are confined to Madagascar and near-by islands, where their perpetuation as a race may be due to the scarcity of carnivores; the remainder belong to Ethiopia and the Oriental region, but in past ages they were widespread in Europe, Asia, and North America. The Lemuroidea fall very naturally into three families, Lemuridæ or Nycticibidæ, Tarsidæ, and Chiromyidæ, or Daubentonidæ. The last two, however, are very small groups, the first containing seven species, known as tarsiers (q.v.), and the latter a single species, the aye-aye (q.v.), and these are such curious animals that it is more natural not to call them lemurs. The family Lemuridæ or Nycticibidæ includes some 80 or 85 species, which are quite generally grouped in four subfamilies, of which the first includes the indris and avahis of Madagascar, the second, the true lemurs, the third, the chirogales of Madagascar and the galagos of Africa, and the fourth, the loris of Ceylon, India, and southeastern Asia, and the angwantibo (or awantibo) and potto of West Africa. The indris is one of the largest species, but the avahi or woolly lemur (*Avahi*, or *Luchanotus laniger*) is a small, solitary, and nocturnal species, slow in its movements and rarely descending to the ground. The mouse lemurs or chirogales (genus *Cheirogalcus*) are remarkable little creatures, long-tailed and nocturnal, some of the species build nests like those of birds, while others are notable for spending the dry season in a state of torpidity, in a hollow in a tree, great quantities of accumulated fat providing the necessary nourishment. The galagos (genus *Galago*) have large, round, naked ears, which the animal can fold at will; they are small, beautiful, active nocturnal animals, with large eyes, long tails, and soft woolly fur. The loris and pottos are remarkable for the slowness of their movements and the small or rudimentary index finger.

The true lemurs are characterized by having 36 teeth, long tails, moderately elongated tarsus, and short cæcum. They are confined to Madagascar and the adjacent Comoro Islands. They vary in size from that of a cat to that of a small squirrel, with foxlike faces and soft, thick fur. They walk on the ground or run about on the limbs of trees on all fours, but they are capable of very agile jumping. They are diurnal, but most active towards evening, and are very noisy, as they go about in small troops; only two or three species are nocturnal or solitary. They are omnivorous and eat insects and birds' eggs as well as buds and fruit. At rest, the tail is usually coiled around the body for warmth. Only one or two young are born at a time, and they are carried about by the mother, at first on her front (the mammae are pectoral), but later on her back. Lemurs are easily kept

and often breed in captivity, and are common in menageries. They are very variable in color, and for that reason the validity of many species is open to question. The most beautiful is the ring-tailed lemur (*Lemur catta*), or Madagascar cat, which is gray, with the long tail marked with alternate black and white rings. Like the others it is locally distributed—not scattered generally all over the island, but only where the environment is suitable. This species lives only on slippery seaside cliffs, where it scrambles about rocks where not even barefooted men can walk, its long, smooth, leather-like palms enabling it to go safely. It feeds almost wholly on the fruit of the prickly pear in winter, stripping off the spinous skin by means of the long canine teeth. In summer it eats wild figs and bananas mainly. It may be easily tamed and taught to live upon cooked rice and the like, but will take no meat. These lemurs use their teeth as weapons, but also strike with their hands, and will put to flight dogs larger than themselves.

The broad-nosed lemur (*Hapalemur myoxicebus griseus*) lives only among bamboos, whose young shoots form its principal fare; it also eats grass and sugar cane. This genus is remarkable for a spine-bearing gland on the forearm. Many lemurs have strange processes upon the skin, the purpose of which is not clearly understood. The color of some species varies with sex, as *Lemur macaco*, the male of which is black and the female red. The ruffed lemur (*Lemur varius variegatus*) is the largest of the race. It inhabits northeastern Madagascar and, as its name implies, is remarkable for its variation in color, some being black and white in patches variously disposed, others reddish brown or red and black. The hair on the neck forms a high ruff.

Lemurs are all perfectly harmless, but their big eyes, weird actions (in some cases), and often loud and strange nocturnal cries have led to their being regarded with superstition by the ignorant, especially in the Oriental countries. Much folklore and superstition have therefore gathered about many species. Consult, on this point, Flower, *Proceedings of the Zoological Society of London* for 1900, p. 231.

See PRIMATES; AYE-AYE; GALAGO; MOUSE LEMUR, POTTO; and other names of particular species. See Plate of LEMURS.

Bibliography. Grandidier and Milne-Edwards, "Mammals," in *Histoire naturelle de Madagascar* (Paris, 1875); also articles in the *Proceedings of the Zoological Society of London* for 1864, 1865, 1867, 1873, 1879, and 1895; and the *Transactions of the same society* for 1863, 1869, and 1872. An excellent account is by Richard Lydekker, *Royal Natural History*, vol. i (London, 1894); and the most recent summary of the group is to be found in D. G. Elliot, *Review of the Primates* (New York, 1913).

LEMURES, lêm'û-rêz (Lat. nom. pl., ghosts). Among the Romans of historic times, the same as *Larvæ* (q.v.), i.e., the souls of the departed, especially of ancestors who hovered about during the night with hostile spirit and so required propitiation by surviving descendants. The festival called Lemuria was held on May 9, 11, and 13. At midnight of each day the father of the family, with bare feet and well-washed hands, using special ceremonies, nine times spat black beans out of his mouth as he walked through the house, looking the while the other

way. Thus, as was supposed, he banished the ghosts from the house for another year. Ovid describes Lemuria in *Fasti* v, 419 ff. Consult W. W. Fowler, *Roman Festivals* (London, 1899), and Georg Wissowa, *Religion und Kultus der Römer* (2d ed., Munich, 1912).

LEMURIA (Neo-Lat., from Lat. *lemur*, ghost). In zoölogy, a hypothetical continent, now largely covered by the Indian Ocean, which was proposed by Haeckel as an area of ancient land characterized by being inhabited by lemuroid animals. The object of the hypothesis was to account for the fact that now lemurs inhabit the widely separated regions of Madagascar and the Malayan islands. The recent evidence that the earliest lemurs inhabited America destroys both the basis of, and the need for, this hypothesis. Consult: A. R. Wallace, *Geographical Distribution of Animals* (New York, 1876); Scott, *The Lost Lemuria* (ib., 1904); R. Steiner, *Submerged Continents of Atlantis and Lemuria: Their History and Civilization* (Chicago, 1911). See LEMUR.

LENA, læ'ná. The easternmost of the three great rivers of Siberia and the chief waterway of east Siberia (Map: Asia, O 2). It rises on the slopes of the Baikal Mountains, about 30 miles west of Lake Baikal and 186 miles northeast of Irkutsk. It flows first in a general northeasterly direction to the town of Yakutsk, after which it flows northwest and then northward. It falls into the Arctic Ocean about long. 127° E., forming a vast delta consisting of seven principal and numerous secondary arms. Its total length is estimated at 2850 miles. The upper course of the river, from its rise to its junction with the Kuta (about 430 miles), at which point it becomes navigable for steamers, is through a mountainous region where the scenery is very picturesque. Its banks are partly rocky and barren and partly covered with thick forests; its course is swift. There is very little agricultural land along the upper course, and the chief occupations of the adjacent settlements are fishing and hunting. The middle stream, from the mouth of the Kuta to its junction with its chief tributary, the Aldan (over 1400 miles), below Yakutsk, is much wider and has on the whole the appearance of a navigable river. The banks are partly lined with mountain masses of red sandstone, and numerous reefs and islets render navigation hazardous. The country along the middle course of the Lena is very sparsely inhabited by Yakuts. From the confluence of the Aldan (double the volume of the upper Lena) the stream has a width of from 4 to 5 miles. In the lower middle course of the river the banks are precipitous and thickly wooded, while towards the delta they become barren and covered with masses of rocks, among which snow remains even during the summer, and here there are practically no permanent settlements. The inclosed islets of the delta are flat and covered only with hardy grasses and moss. On a rocky promontory of one of the inclosed islands, known as Monument Cape, stands a wooden cross commemorating the victims of the *Jeannette* expedition buried there. The Lena is frozen at Kirensk (at the beginning of its middle course) from the end of October to the end of April; at Yakutsk from the middle of October to the end of May; and at the delta from the middle of September to the middle of June, and some of the deltaic channels are sometimes blocked with ice through the year. The

opening of the river is accompanied by disastrous floods because of the melting of the snow in the upper reaches while the mouth is still locked in ice. Steam navigation was first introduced on the Lena in 1822, and is confined chiefly to the upper part of the river and its tributaries, freight (chiefly minerals, fish, and grain) being carried principally in barges and wooden vessels built in the shipyards on the upper course, where shipbuilding is the chief industry. The principal ports on the Lena are Verkholensk, Vitimsk, Olekminsk, Yakutsk, and Bulun. The Lena has numerous tributaries, of which the most noteworthy are the Kirenga, the Vitim, the Olekma, and the Aldan from the right and the Viluy from the left. The river is rich in fish, but its fishery industries are still undeveloped and are mostly in the hands of the Yakuts. Some of the tributaries of the river abound in gold, and the region along the river is highly mineralized in some parts. The Lena was discovered by the Russians in 1628.

LENAPE. A tribe of Indians. See DELAWARE.

LENAPE (lén'a-pē) **STONE**. A slate tablet found in Bucks Co., Pa., in 1872, bearing, among other things, the outline of an elephant or mammoth. It is of doubtful authenticity. Consult H. C. Mercer, *The Lenape Stone* (Philadelphia, 1885).

LENARD, le-närt', PHILIPP (1862-). A Hungarian physicist, born at Pressburg, Hungary. He was educated at the universities of Budapest, Vienna, Berlin, and Heidelberg. In 1896 he was professor at Heidelberg and in 1898 became professor and director of physical sciences at Kiel. In 1907 he returned to Heidelberg and in 1909 became head of the newly established radiological institute there. He first observed the peculiar properties of cathode rays penetrating into the outside air from the Crookes tube, which rays now bear his name. In 1905 he was awarded the Nobel prize for physics. He wrote *Ueber Kathodenstrahlen* (1906) and *Ueber Aether und Materie* (1910).

LENARTOWICZ, lén'ar-tó'vich, TEOFIL (1822-93). A Polish poet, born at Warsaw and educated there. He lectured on Polish literature at Bologna for a time, then went to Rome, and afterward lived in Florence. His best-known poems are *Szopka* (1849), *Lurenka* (1851), *Nowa Lurenka* (1857), *Poezje* (1861), and the idyl *Jagoda z mazowieckich lasów* (A Berry from the Masovian Forest, 1880). They are passionately patriotic, religious, and descriptive of quiet rural life. He translated Dante's *Divina Commedia* into Polish. Lenartowicz was also a gifted sculptor.

LENAU, læ'nou, NIKOLAUS (1802-50). A name assumed by Nikolaus Niernbsch von Strehlenau, an Austrian lyric and elegiac poet. He was born at Csátfád, Hungary, studied philosophy, law, and then medicine at Pressburg and Vienna, but he early turned to the profession of letters. His genius first found expression in *Gedichte* (1832), full of sadness and exquisitely melodious. He then went to Stuttgart and associated with poets of the Swabian school, especially Kerner, Schwab, and Karl Mayer. Growing restless there, he went to America in 1832 and traveled on horseback as far as Ohio, in what was then the West. He returned in 1833, disillusioned by experience, to find himself already poetically famous as the lyric representative of what was an emotional period of politi-

ical transition. The next ten years were passed at Vienna and in Swabia. *Faust* (written 1833-34; published 1836; 2d ed., 1840) showed even more than the poems of 1832 a nature at rest neither with itself, with the world, nor with God. It wavers between the epic and the dramatic, but abounds in brilliant scenes. In the same year he published *Neuere Gedichte* (2d enlarged ed., 1840). *Savonarola* (1838, 5th ed., 1866) is perhaps the highest point he ever reached in his art, while *Die Albigenser* (1842; 4th ed., 1873) is to be regarded rather as a fragment. *Don Juan* (1851), a sort of drama, was left unfinished at his death. Lenau's finest poems are descriptive of Hungarian life and scenery. He was involved in two or three sad love affairs. Soon after 1844 he became insane. The rest of his life was passed in the asylum at Oberdöbling, near Vienna. He died Aug. 22, 1850. His *Sammliche Werke* were edited by Anastasius Grün (in 4 vols., Stuttgart, 1855; 2 vols., 1881). There is a later edition with life and notes (Leipzig, 2 vols., 1882), another (2 vols., Berlin, 1883), and a critical edition by Schaeffer in two volumes (Leipzig, 1905).

Bibliography. A. X. Schurz, *Lenaus Leben* (2 vols., Stuttgart, 1855); L. A. Frankl, *Zu Lenau Biographie* (2d ed., Vienna, 1885), and his edition of *Lenau und Sophie Louenthal, Tagebuch und Briefe des Dichters* (Stuttgart, 1892); T. S. Baker, *Lenau and Young Germany in America* (Philadelphia, 1897); L. Raustan, *Lenau et son temps* (Paris, 1898); A. W. Ernst, *Lenaus Frauen gestalten* (Stuttgart, 1902); Camillo von Klenze, *The Treatment of Nature in the Works of Lenau* (Chicago, 1902); Isidor Sadger, *Aus den Liebesleben Lenaus* (Vienna, 1909).

LENBACH, Iān'hāg, FRANZ VON (1836-1904). A German portrait painter, the greatest of the nineteenth century. He was born at Schrobenuhausen in Upper Bavaria, Dec. 13, 1836. When a boy he worked as an apprentice to his father, a master mason. His first artistic studies were all made directly from nature, and a brief period of study at the Polytechnic School of Augsburg only served to instill in him a lifelong hatred for art academies. Two years' work under Gräffe at Munich increased this dislike. He worked for himself in his native village until in 1857 he became a pupil of Piloty at Munich. His first work to attract attention was "Peasants Taking Refuge from a Storm in a Chapel" (1857), now in the Magdeburg Museum. It reveals the influence of Piloty, but contains a powerful naturalism unknown to that master. During the same year he accompanied Piloty to Italy, where he had occasion to study more thoroughly the old masters, whom he already revered. One of the results of this journey was his "Arch of Titus," in 1858, now in the Museum of Pressburg, the vivid realism of which caused much commotion. Equally powerful is his "Shepherd Boy" (1860), in the Schack collection, Munich. In 1860 he was called, together with Böcklin and Reinhold Begas, to teach in the new art school at Weimar, but remained only a year and a half.

The most important influence in the formation of his style was his commission from Baron Schack to copy works of Titian, Rubens, Velazquez, and other masters for his gallery at Munich. In 1863 he was sent to Italy, and in 1867 to Spain. By the study of these masters he acquired a mastery of color, in which he had

hitherto been deficient. After his return to Munich in 1868 he devoted himself entirely to portraiture, which he had long recognized as his chief strength and soon became the most famous portraitist of Germany. From 1872 to 1874 he resided in Vienna, where he was held in highest esteem, and painted the Emperor and other Austrian notables. In 1875-76 he visited Egypt, and after that time resided at Munich. Many of his winters, after 1882, were passed at Rome, where he was the centre of a brilliant artistic circle, and portrayed the Pope, Queen Margherita, and Minister Minghetti (1885, Dresden). He received gold medals at Paris (1875), Munich (1869, 1879), and Vienna (1882), and many orders and honors, and an honorary doctorate was conferred on him by the University of Halle.

Lenbach's work in the beginning was as frankly realistic as that of Courbet, but his realism was softened and idealized by study of the old masters. His first portraits resemble Rembrandt's in the treatment of life and in characterization. He was a great admirer of Rubens, but neither Rubens nor Velazquez seems to have influenced him as much as Titian. The old masters, however, never affected the individuality of his work. He excelled especially in characterization. Knowing his sitters, he portrayed them in the fullest extent the painter's conception of his character. His conception, though a high one, was always true. His color was harmonious and pleasing, he was a fine brushman, and knew just what to emphasize. Only the head and eyes were finished; the hands and dress much less so, and there were no accessories. At first famous for male portraits, in later life he succeeded also with women. Children he painted only after the birth of his own little girl, whom he portrayed many times and with great charm. Lenbach's portraits are a pictorial epic of his age and country. He has immortalized the great and celebrated Germans of a whole century.

To his art is due the popular aspect of the great men who created the modern German empire, whom he portrayed over and over again—the strong and rugged Bismarck, of which good examples are in the collection of Baron (National Gallery), Munich; and Prince Bismarck (Hamburg, Leipzig, Frankfurt, Königsberg, Cologne, Leipzig); the thoughtful and scholarly Moltke, the kindly old Emperor William I (Leipzig, Frankfurt, Crefeld); the chivalric Crown Prince, afterward Frederick III. Among other celebrated sitters were Emperor William II, King Albert of Saxony (Dresden), Pope Leo XIII (1885, New Pinakothek, Munich), Count Schack, Paul Heyse, his wife, Gladstone, Döllinger (Munich), Bishop Strossmayer, Delbrück, Richard Wagner, Franz Liszt, Helmholtz, Johann Strauss, Hans von Bülow, and Hermann Levi. His latest works include portraits of Prince Regent Leopold of Bavaria, the Imperial Chancellor Hohenlohe-Schillingsfürst (Berlin), the historian Mommsen, and the architect Gabriel Seidl. The best known of his portraits of himself are those of 1865, in the Schack Gallery at Munich, in the manner of Rembrandt, and that of 1895, in which the artist is said to rival Titian. The very essence of his art is shown in his chalk drawings, in the mastery of which he may even be compared with Holbein. His portraits were produced in heliogravure under the title *Franz*

von Lenbachs zeitgenössische Bildnisse (Munich, 1891-96). Consult: Rosenberg, "Lenbach," in *Künstler Monographien* (Bielefeld, 1898); W. Wyl, *Franz von Lenbach, Gespräche und Erinnerungen* (Stuttgart, 1904); Christian Brinton, *Modern Artists* (New York, 1908).

LEN'CAN. An interesting tribe or confederacy, with several subtribes, constituting a distinct linguistic stock, occupying the mountain regions of Honduras, westward from Comayagua and perhaps extending over the Salvador border. They are fairly civilized, industrious and peaceable, although brave fighters with a strong feeling of native patriotism.

L'ENCLOS, län'kló', NINON DE. See NINON DE LENCLOS.

LEND A HAND CLUBS. Societies of a religious, philanthropical, and social character formed among young people. The name is from a story by the Rev. Edward Everett Hale, *Ten Times One Is Ten* (Boston, 1870), relating how 10 persons banded themselves together to live the mottoes, "Look up and not down; look forward and not backward; look out and not in; lend a hand." Each of the original 10 persuaded 10 others to devote themselves to the same service, and thus, according to the story, in 27 years the entire world was won. The first Lend a Hand Club was formed in 1870, and without any concerted effort similar bands sprang up in many places. In 1874 a common bond was thought desirable, and at Chautauqua, N. Y., the Look Up Legion was formed, a little later its organ, *Lend a Hand*—a monthly, edited by Dr. Hale—was established. In 1891 the Ten Times One Corporation was brought into being. In 1900 there existed these affiliated societies: the Look Up Legion, the Commercial Temperance Union; the Order of Send Me, the Lend a Hand clubs; the I. H. N. [In His Name—the title of Mr. Hale's touching Waldensian story] clubs. A badge, the Maltese cross, and a motto, "In His Name," have been adopted in common, but their use is voluntary. Consult Bacon and Northrop, *Young People's Societies* (New York, 1900). See CHRISTIAN ENDEAVOR, YOUNG PEOPLE'S SOCIETY OF; KING'S DAUGHTERS AND SONS; BROTHERHOOD OF SAINT ANDREW; EPWORTH LEAGUE.

LENDIT, FAIR OF. See LANDIT.

LENEPVEU, lén'e-vē', JULES EUGÈNE (1819-98). A French genre and historical painter. He was born at Angers and was a pupil of Picot and at the Beaux-Arts, won the Prix de Rome in 1847 with his "Death of Vitellius," and in the same year exhibited a "Saint Saturnin" (Angers Museum). In 1855 he sent to the international exposition several canvases showing Italian influence: "The Martyrs in the Catacombs" (bought by the state), "Pius IX in the Sistine Chapel," and a "Festival at Venice." More original were "A Venetian Wedding" (1857), "The Virgin at Calvary" (Nantes Museum), and "Hylas" (1865). In the later period of his life he exhibited less at the Salon and was occupied chiefly with the decoration of public buildings. This work includes the frescoes of the theatre at Angers; those in the chapel of the hospice of St. Mary at Angers; decorations of many Paris churches, especially Ste. Clotilde, St. Louis en l'Île, and St. Sulpice; the ceiling of the Paris Opera House, executed in the manner of Tiepolo; and decorative paintings in the Panthéon. Lenepveu is a typical painter of the classical style.

LENFANT, lén'fän', JACQUES (1661-1728). A French Protestant theologian. He was born at Bazouche, and was educated at Saumur, at Geneva, and at Heidelberg, where he became minister of the French Protestants in 1684. In 1689 he became pastor of the French church at Berlin, and, except for visits to England and Holland in 1707 and to German cities, remained there until his death. His writings include: *Histoire de la papesse Jeanne* (1694); his chief work, *Histoire du concile de Constance* (1714); *Histoire de la guerre des Hussites et du concile de Bâle* (1731).

L'ENFANT, PIERRE CHARLES (1755-1825). A French officer who came to America with Lafayette in 1777 and joined the American army. He was promoted to a captaincy in the engineers in 1779, was severely wounded in the attack on Savannah in the same year; was taken prisoner at Charleston in May, 1780; was exchanged in the following November, and was commissioned brevet major, May 2, 1783. He designed the badge of the Order of the Cincinnati. In 1791 he planned the city of Washington, under the direction of George Washington, and with aid in the way of plans of foreign cities from Thomas Jefferson. More than a century later this service brought him into prominence in connection with the attention given to city planning (q.v.) in the United States since 1900. In 1911 a monument to L'Enfant, built with money appropriated by Congress, was dedicated in the National Cemetery at Arlington, Va. A copy of L'Enfant's plan of Washington is carved on the monument. He is also credited with the radial revenues which are a feature of the city of Buffalo. In 1812 he declined the professorship of engineering at West Point offered him by President Madison. He designed several public buildings in the larger cities of the East.

LENNER, lén'ér, VICTOR (1873-). An American chemist. He was born at Belmond, Iowa, and studied at Dickinson College (1889-90) and at the University of Pennsylvania (Ph.D., 1898); was an assistant in chemistry at the University of California (1893-96) and at Columbia (1898-1900), and at the University of Wisconsin served as assistant professor of general and theoretical chemistry (1900-04), associate professor of chemistry (1904-07), and thereafter as professor. He translated Moissan's *The Electric Furnace* (1904) and is author of *Laboratory Experiments* (1902; 4th ed., 1906).

LENNÉ, lén-ná', PETER JOSEPH (1789-1866). A noted German landscape gardener and architect, son of the famous naturalist best known by the Latinized name Linnæus. (See LINNÆUS.) After studying the sciences and architecture he went to Paris and Vienna to specialize in garden architecture and arrangement. At Vienna he remodeled the gardens of the court, and at Berlin he united beautifully the gardens and parks of Potsdam. He was the architect of the prison at Coblenz, the school of architecture and horticulture at Berlin, and the restorer of the residence of Sans-Souci. His fame was so well deserved that his torso was placed in the galleries of Sans-Souci.

LENNEP, lén'nép, JACOB VAN (1802-68). A Dutch dramatist and novelist, born in Amsterdam, son of the philologist David Jacob Lennep. Educated for the law, he soon acquired a large practice, writing at the same time poems (1826-27) and many patriotic novels and plays that won him the title of the Walter Scott of Hol-

land. Of these the first were versified *Legends of the Fatherland* (1828), followed by the comedies *The Frontier Village* (1830) and *The Village over the Frontier* (1830), and the novels (among many others) *Our Forefathers* (1838), *The Rose of Dekama* (1836), and *The Adopted Son*, the last two translated (1847). Lennep also made noteworthy translations into Dutch from Shakespeare, Byron, Southey, and Tennyson, and worked for some years on an uncompleted edition of the great Dutch poet Vondel, *De Werken van Vondel in verband gebracht met zijn leven* (1855-69). Lennep's *Dramatic Works* are collected in 3 volumes (1852-54), his poems in 13 volumes (1859-72), his novels in 23 (1855-72). His *De Voornaamste Geschiedenissen van Noord-Nederland*, corresponding to Scott's *Tales of a Grandfather*, are in 4 volumes (1845-49). Lennep was also a diligent contributor to periodicals. Consult his *Life* and a bibliography in Ten Brink, *Geschiedenis der Noord-Nederlandsche Letteren in de XIX eeuw*, vol. i (Rotterdam, 1904).

LENNGREN, lén'grän, ANNA MARIA (1755-1817). A Swedish poet, born probably at Upsala. Her father, Magnus Malmstedt, was a professor at the University of Upsala, and Anna was carefully educated. When she was 18, her first poem appeared and attracted much attention. Afterward she translated French and Latin plays, which were presented before the court. In 1780 she married Karl Peter Lenngren, one of the editors of the *Stockholmsposten*, and her poems were published anonymously in this journal for several years. When her identity was discovered, the Swedes hailed their new poet with enthusiasm. She is not profound or imaginative in an original way, but she is always graceful and natural, and her idyls and satires reflect the life she knew. Her collected poems (*Skaldeforsök*) were first published in 1819, in 1856 with a biography by Carlén, and again with a biography by Warburg and illustrations by Larsson (Stockholm, 14th ed., 1907).

LENNI LENAPE, lén' lén'a-pə. An Algonquin tribe. See DELAWARE.

LENNON, JOHN BROWN (1849-). An American union labor leader and public official. He was born in Lafayette Co., Wis., and was educated in the public schools. From 1886 to 1910 he was general secretary of the Journeyman Tailors' Union of America and also editor of *The Tailor*. In 1889 he became treasurer of the American Federation of Labor. He was appointed a member of the Commission on Industrial Relations by President Taft and was continued in that capacity by President Wilson. He became known as a lecturer on social problems and was chosen vice president of the Illinois Anti-Saloon League.

LENNOX, CHARLES. See RICHMOND, third DUKE OF.

LENNOX, CHARLOTTE RAMSAY (1720-1804). An Anglo-American poet, Shakespearean critic, and miscellaneous writer, born in New York. Her father was Lieutenant Governor Ramsay. She was sent to school in England at 15, married there, never returned to America, and at the age of 27 attracted attention by a volume of *Poems on Several Occasions* (1747). She was highly esteemed by the novelist Richardson and by Samuel Johnson, and on the death of her husband, Henry Lennox, supported herself by miscellaneous writing. Among her works were: *Memoirs of Harriet Stuart* (1751), *The*

Female Quixote (1752), and *Henrietta* (1758), popular novels; a translation of *Sully's Memoirs* (1761; reprinted, 1854-56); a novel, *Sophia*; two comedies, *The Sisters* (1769) and *Old City Manners* (1773); *Euphemia*, a novel (1790); and *Memoirs of Henry Lennox* (1804). Most noteworthy of her works is *Shakespeare Illustrated* (3 vols., 1753-54), a collection of the novelistic sources of Shakespeare, translated and annotated with the general aim of showing the inferiority of the dramas to their originals. Dr. Johnson was thought to have had a hand in this work, for which he wrote the dedication. For an amusing sketch of the work, consult T. R. Lounsbury, *Shakespeare as a Dramatist* (new ed., New York, 1908).

LENNOX, EARL OF. See STEWART, MATTHEW.

LENNOX, WILLIAM PITT, LORD (1799-1881). An English soldier and writer, fourth son of the fourth Duke of Richmond and godson of William Pitt. He was educated at Westminster and, having entered the army, served for several years on the staff of the Duke of Wellington. He was also a voluminous contributor to the *Sporting Review*, *Bentley's*, and other magazines and newspapers. Among his publications, which include works on history and fiction, are: *Compton Audley* (1841), *The Tuft-Hunter* (1843); *Percy Hamilton* (1852), *Philip Courtney* (1852), *Merré England* (1857), *Recreations of a Sportsman* (1862), *Life of the Fifth Duke of Richmond* (1862); *Adventures of a Man of Family* (1864), *Drafts on my Memory* (1865); *Fifty Years' Biographical Reminiscences* (1863); *My Recollections from 1806 to 1873* (1874); *Fashion Then and Now* (1878); *Plays, Players, and Playhouses* (1881).

LENNOXVILLE. A village in Sherbrooke Co., Quebec, Canada, at the junction of the Massawippi and St. Francis rivers and on the Grand Trunk and Canadian Pacific railways, 105 miles south-southwest of the city of Quebec (Map: Quebec, G 5). It is the seat of the University of Bishop's College and of Bishop's College School. Pop., 1901, 1120; 1911, 1211.

LENOIR, le-nôr'. A town and the county seat of Caldwell Co., N. C., 70 miles by rail northwest of Charlotte, on the Carolina and Northwestern Railroad (Map: North Carolina, A 2). It is the seat of the Davenport Female College and contains the Foot Hills Sanitarium, Pioneer Library, Blowing Rock (in the vicinity), at an elevation of 4500 feet, and High Briten Park. The town is an important furniture-manufacturing centre and has also cotton, yarn, veneer, and roller mills, machine shops, harness factory, lumber yards, etc. Lenoir is situated in a fertile agricultural and fruit-growing region, and there are some gold and mica mines near by. The water works and sewage system are owned by the municipality. Pop., 1900, 1296; 1910, 3364.

LENOIR, le-nwär', ALEXANDRE ALBERT (1801-91). A French architect, son of Alexandre Marie Lenoir, the painter and archaeologist. He studied at the Collège Bourbon and was a pupil of Debret in the Ecole des Beaux-Arts. He lived in Rome (1830-32) and in 1833 wrote *Projet d'un musée historique*, suggesting the union of the Palais des Thermes and the Hôtel de Cluny. He was appointed architect to carry out this plan, became a member of the committee on historic monuments in the Bureau of Education, secretary of the Ecole des Beaux-Arts for life (1862), and a member of the Academy of Fine

Arts (1869). He wrote the very valuable work, *Instruction sur l'architecture monastique* (1852-56); *Des monuments antérieurs à l'établissement du christianisme dans les Gaules* (1840); *Architecture militaire au moyen âge* and *Monuments religieux au moyen âge* (1847); *Le tombeau de Napoléon Ier aux Invalides* (1855); *Statistique monumentale de Paris* (1861-67). He was famous for his reproductions of mediæval buildings.

LENOIR CITY. A city in London Co., Tenn., 23 miles southwest of Knoxville, on the Southern Railway, situated at the junction of the Tennessee and Little Tennessee rivers (Map: Tennessee, F'3). There are extensive car works, cotton-yarn and hosiery mills, lumber yards, and a flour mill, for which ample water power is available. Lenoir City owns and operates its water-works system. Pop., 1910, 3392.

LENORE, Ger. pron. lâ-nô're. 1. A noted ballad by Bürger (1773) and the name of its heroine. The story rests on a variety of similar Slavic tales, which gave rise to the German tradition. Its basis is the popular belief that the tears of a maiden for a lost lover may bring him back from the grave in the form of a vampire. In all the tales of this class the lover fetches the maiden from her home and carries her with him on a demoniac ride to the churchyard, where she is either torn in pieces or rescued at the last moment by the crowing of the cock or by some providential intervention. 2. A poem by E. A. Poe, first published under the title *A Pæan* (1831). 3. The heroine of Poe's *Raven*.

LENORMAND, le-nôr'mân', MARIE ANNE ADELAÏDE (1772-1843). A French fortune teller, born at Alençon. After going to Paris (1790) she took up fortune telling as a profession. She soon attracted attention and opened a "cabinet of divining," where for many years she was consulted by persons of all ranks, even by the court of Napoleon. It is said that Josephine was greatly influenced by her. In 1809 she had to leave Paris and went to Brussels. She was repeatedly imprisoned. Among her publications are: *Prophétiques* (1815); *Souvenirs de la Belgique* (1822); *Memoirs of the Empress Josephine*, vol. i (1904).

LENORMANT, le-nôr'mân', CHARLES (1802-59). A French archaeologist, born in Paris. He originally studied law and prepared himself especially for the teaching of Roman law, but after visiting Italy devoted himself to archaeology. He was made inspector of fine arts in 1825 and in 1828 accompanied the younger Champollion to Egypt. Afterward he went to Greece as a member of the commission to explore the Morea. He was made curator of the library of the Arsenal in 1830, and in the Royal Library he became assistant curator of the cabinet of antiquities (1832), curator of printed books (1837), and director of the cabinet of medals (1841). Meanwhile he had lectured at the Sorbonne. He was elected to the Institute in 1839 and in 1848 was appointed to the chair of Egyptian archaeology in the Collège de France. He contributed numerous articles on art and archaeology, chiefly to the *Correspondant* (ed. by him, 1843-55), and to the *Annales de l'Institut Archéologique de Rome*, the *Revue de Numismatique*, and the *Recueil de l'Académie des Inscriptions*. Books written by him include: *Des artistes contemporains* (1833); *Introduction à l'histoire orientale* (1838); *Musée des antiquités égyptiennes* (1835-42); *Le trésor de numismatique et de*

glyptique (1834-50), with Paul Delaroché and Henriquel-Dupont, *Elite des monuments céramographiques* (4 vols., 1837-61), with De Witte; *Questions historiques* (1845).

LENORMANT, FRANÇOIS (1837-83). A French archaeologist, born in Paris. He was early trained by his father, the archaeologist Charles Lenormant, in the Greek literature and instructed as to the monuments; and when only fourteen years of age he published in the *Revue Archéologique* an article on some Greek tablets from Memphis. In 1857, for an essay entitled *Classification des monnaies des Lagides*, he was awarded the numismatic prize by the *Académie des Inscriptions*, and two years later went with his father to Greece and the East. In 1860, after the massacre of Christians by the Druses (q.v.), he went to Syria, and afterward published a *Histoire des massacres de Syrie en 1860* (1861). Returning to Greece, he conducted excavations at Eleusis and along the Sacred Way, of which the results were partially embodied in *La voie sacrée éleusienne* (1864), a work unfortunately never completed, and in articles in periodicals. In 1862 he was appointed sub-librarian of the French Institute, and in 1874 professor of archaeology at the Bibliothèque Nationale. During his last years he devoted part of his time to an exploration of the less-visited parts of southern Italy. Here he met with an accident and, after a long illness, died Dec. 9, 1883. Lenormant was a scholar of encyclopædic learning, wonderful diversity of interest, and great productivity. In Greek archaeology proper his contributions were largely in the form of articles in such journals as the *Revue Archéologique* and the *Gazette Archéologique*, of which he was founder in 1875 (with De Witte), editor, and chief contributor. He edited, with Robiou, *Chefs d'œuvre de l'art antique* (7 vols., 1867-68), and had begun to publish the results of his Italian travels in *La Grande-Grèce* (1880-84) and *A travers l'Apulie et la Lucanie* (1883). In the field of numismatics his great work was *La monnaie dans l'antiquité* (1878-79), of which only three volumes appeared, but he also published a popular work, *Monnaies et médailles* (1883), and numerous essays. Perhaps his most lasting work was done in the study of the ancient nations of the East, with especial reference to the origins and early forms of their civilization. His studies were summarized in the *Manuel de l'histoire ancienne de l'Orient* (1869; 9th ed., 1881-83) and *Les origines de l'histoire d'après la bible et les traditions des peuples orientaux* (1880-84). His discovery of the Accadian, a non-Semitic language, in the cuneiform texts, was announced and defended in a series of papers, and his investigation of the Chaldean religion led to the publication of *Les sciences occultes en Asie* (1874-75). Important at the time of its publication was the *Essai sur la propagation de l'alphabet phénicien dans l'ancien monde* (1872-75).

LE NÔTRE (LE NOSTRE), le nô'tr', ANDRÉ (1613-1700). A French landscape gardener, born in Paris. He was the son of the superintendent of the Tuileries gardens, studied painting under Simon Vouet, and later took up architecture. But Le Nôtre preferred the occupation of his father, and by first applying his principles to the Tuileries gardens soon gained such a reputation that Fouquet gave him charge of laying out the grounds of the Château de Vaux. This

was the first example of the formal French garden, stiffly designed on geometrical lines, with artificial lakes and grottoes, and ornamented with statues and clipped trees, kept at some distance from the mansion so as not to interfere with the view. But, despite its severity, the design had a certain grandeur, and it suited the architecture of the day. When Louis XIV saw these gardens en fête, he made Le Nôtre director of the royal grounds (1657) and gave him charge of the new park of Versailles, which shows, more than any other of his works, his wonderful knowledge of perspective. Other French gardens that he laid out, entirely or partially, are those of Chantilly, Meudon, Saint-Cloud, Fontainebleau, Saint-Germain-en-Laye, and Clagny. He went to Italy in 1679 and was received by the Pope with great friendliness. In Rome he laid out the gardens of the Vatican, the Quirinal, the Villa Albani, the Villa Ludovisi, and the Villa Doria Pamphili. His influence was felt in Germany and especially in England, where he designed the parks at Greenwich and Althorp, and St James's Park in London. Among the many honors which he received from Louis XIV was the Order of St. Michel in 1694.

LENOX. A town, widely known as a summer resort, including the villages of New Lenox and Lenoxdale, in Berkshire Co., Mass., 6 miles (direct) south of Pittsfield, on the New York, New Haven, and Hartford Railroad (Map. Massachusetts, A 3). Lenox itself is of great beauty, and the surrounding region has many places of interest. Among the attractions are Mahkeenac and Laurel lakes, Bald Head, the Pinnacle, and Yokum's Seat, besides many fine residences and Trinity School, and Lenox Library. Hawthorne, Henry Ward Beecher, and Fanny Kemble were residents of Lenox. The town was administered by town meetings. Settled in 1700, Lenox was incorporated as a district in 1767, and named in honor of Charles Lennox, Duke of Richmond. Pop., 1900, 2942. 1910, 3060.

LENOX, JAMES (1800-80). An American philanthropist, born in New York City, where his father, a wealthy Scottish merchant, had settled in 1784. He studied at Columbia, was admitted to the bar, and for a time was connected with his father in business; but the great passion of his life was collecting books and objects of art. During the years that he was most actively engaged in this work, his library grew so rapidly that it was impossible for him to arrange it systematically, and the books as they were received and checked off were stored in the vacant apartments of his residence. This, of course, rendered it exceedingly difficult to find particular volumes, and as he refused to allow others access to his storeroom, the library remained practically unused until it was removed to the building at Fifth Avenue and Seventieth Street which he erected for its reception in 1870. On May 23, 1895, the Lenox Library was consolidated with the Astor Library and the Tilden Trust to form the New York Public Library (q.v.). The Lenox Library building was torn down in 1913 to make way for Mr. Henry C. Frick's new residence. Besides giving his library to the city of New York, Mr. Lenox contributed generously to the Presbyterian Hospital in that city, to Princeton University, and to many public and private charities.

LENS, lĕns. A town of France, in the De-

partment of Pas-de-Calais, on the Deûle, 17 miles south-southwest of Lille (Map: France N., H 2). It is a place of great antiquity and was once strongly fortified. It is located in the midst of the coal deposits of Pas-de-Calais, has engineering works, iron and steel foundries, and manufactories of beet sugar, soap, and wire rope. In the vicinity are highly productive coal mines. Pop., 1901, 24,370; 1911, 31,746. It is famous for the victory gained by Louis II of Bourbon, Prince of Condé, over Leopold William, Archduke of Austria, under its walls in 1648. During the European War which began in 1914, Lens and the surrounding region were almost a continual battlefield. The town itself was taken by the Germans and compelled to pay a heavy indemnity. See WAR IN EUROPE.

LENS, lĕnz (Neo-Lat., from Lat. *lens*, lentil; so called on account of the shape of the lens). Broadly speaking, a circular section of a transparent substance, having its surfaces either both spherical or one of them plane and the other spherical. Lenses are either convex (thickest in the middle) or concave (thickest at the edges), and a ray of light in passing through a lens is bent towards its thickest part. The former class changes the direction of the rays by making them more convergent than before; the latter makes them more divergent. The point to which the rays converge, or from which they diverge, is called a *focus*—*principal focus* when the rays are parallel. The focus for a convex lens is real, i.e., the rays actually pass through it, form a real and inverted image smaller or larger than the object, according as the object is at a distance greater or less than twice the focal length; but if the object be within the principal focal length a virtual image is formed, erect and magnified. For a concave lens the focus is virtual; the rays seem to come from it and form an erect image smaller than the object. See LIGHT, where a section is devoted to lenses and the various theoretical questions involved are discussed. For different forms of lenses as used in various optical instruments, see MICROSCOPE; PHOTOGRAPHY; TELESCOPE, etc. See, also, ABERRATION, SPHERICAL; ABERRATION, CHROMATIC. Consult: Thomas Preston, *Theory of Light* (London, 1901); R. T. Glazebrook, *Physical Optics* (New York, 1907); R. W. Wood, *Physical Optics* (ib., 1911).

LÉNSTRÖM, lĕn'strĕm, CARL JULIUS (1811-93). A Swedish poet and critic, born at Gefle. He studied philosophy and theology at Upsala, took orders in 1834, and taught literature at the University of Upsala from 1836 to 1843. During the next two years he taught philosophy at Gefle. In 1845 he was appointed rector at Vester-Löfsta. He wrote on philosophy, poetry, theology, and æsthetics, and his principal publications include a compendium of the Church history of his country, *Lärobok i allmänna och svenska kyrkohistorien* (1843); contributions to the history of Swedish æsthetics, *Bidrag till den svenska æstetikens historia* (1840); *Färljuvelen* (1838), a novel; *Cromwell* (1860), a poem, *Gustaf II. Adolf* (1860), poems; and some sketches, *De fyra stånden, taflor ur svenskt sedelif* (1865).

LENT (AS. *lenoten*, *lengten*, OHG. *lensin*, *lengizin*, *lenso*, Ger. *Lenz*, spring, from AS. *long*, OHG., Ger. *lang*, Lat. *longus*; so called from the lengthening days in spring). The season of fast-ing observed before Easter in the Roman Catho-

lic, Eastern, and Anglican churches. Its length has varied considerably in different times and places. Before the third century there is positive evidence of the solemn observance everywhere of the last two days of Holy Week, and it gradually spread to include the whole week. But aside from this solemn fast, Athanasius urges upon the Alexandrians a forty days' fast as being the custom elsewhere, and the Council of Niceæ (325) recognizes it as an established custom. The period of 40 days was adopted in commemoration of the fasting of Christ, as well as Moses and Elijah, for that length of time. In the early Church the primary idea was penitence, and fasting was incidental. In the mediæval Church the fasting became very strict, including abstention from all meat, milk and its products, and eggs, and from all food till evening. Gradual relaxations were permitted, until now the fast of lent is more nominal than real. See EASTER; FAST; HOLY WEEK.

LENT'HALL, WILLIAM (1591-1662). An English politician. He was born at Henley-on-Thames, studied at Oxford, and was called to the bar in 1616. He represented Woodstock in the Short Parliament of 1640 and in the Long Parliament, serving as Speaker from 1640 to 1653. In 1643 he was appointed Master of the Rolls and in 1646-48 was one of the commissioners of the great seal. When Cromwell as Protector summoned his first Parliament, Lenthall was again chosen to the chair (1654), and was a member of the Parliament of 1656 also. On the reassembling in 1659 of the Long Parliament, he resumed his former position, and, convinced of the inevitability of the Restoration, subsequently aided in bringing it about. His career, admittedly successful as Speaker because of his pliability in troublous times, was attacked by contemporaries on the ground of loyalty; on the other hand, his refusal to indicate whether or not the five accused members in the House of Commons were present when in 1642 the King attempted to arrest them, was appreciated by Parliament and made him famous.

LENTICELS (Fr. *lenticelle*, dim. of *lenticule*, lens-shaped, lentil-shaped, from Lat. *lenticula*, lentil, dim. of *lens*, lentil). Roundish or elongated corky patches of various sizes, usually projecting a little above the epidermis of stems. Where cork formation (bark) is going on, at certain points corresponding usually . . . to the stomata (breathing pores) of the epidermis, the cork cells become rounded and loosened from one another. Under the strain the epidermis ruptures, and the powdery mass of cells is exposed, through a usually biconvex rift, whose shape suggested for the structure the name lenticel. Lenticels are present in all the great groups of vascular plants, and very few plants with a regular annual formation of cork fail to show them. They are most conspicuous on young shoots, but in some cases, as in the birch, they become more prominent as they grow older. The lenticels that are developed at a point early determined by a stoma, a root, or a bud, are called primary lenticels; while those which are formed later, and at a point not determined by an organ, are called secondary. Lenticels serve to admit air to the living internal tissues, through an impervious corky layer, and they vary in porosity in different plants and at different seasons. See AERATION.

LENTIGO. See FRECKLES.

LENTIL (OF. *lenticille*, from Lat. *lenticula*,

dim. of *lens*, lentil), *Vicia hirsuta*, or *Lens esculenta*. An annual leguminous plant, related to tares (see TARE), a native of the Mediterranean region. It is extensively cultivated in the south of Europe, in Egypt, in the East, and to some extent in other parts of the world. It has a weak, branching stem, from 6 to 18 inches high, and pinnate leaves with 6 to 8 pairs of leaflets and terminal tendrils. The flowers are small, white, lilac, or pale blue. The pods are very short and blunt, thin and smooth, and contain two seeds shaped like a double convex lens. There are numerous varieties, with white, brown, and black seeds, of various sizes, the largest being about half an inch in diameter. The lentil grows best in a light and rather dry soil; in a very rich soil it produces comparatively few pods.



LENTIL.

Unlike the pea and the bean, the lentil is eaten only when fully ripe. The brown or reddish lentil is smaller than the yellow, but of more delicate flavor. It is one of the most ancient of food plants—probably one of the first to be brought under cultivation by man. Since it has been grown from early times in Asia and in the Mediterranean countries, it seems probable that the reddish Egyptian lentil was the "red pottage" of Esau. In Europe this legume is far less grown than the pea and the bean, partly because its yield of seed and straw is less. The market is partially supplied from Egypt. The lentil, according to analysis, is one of the most nutritious of all the legumes, but its flavor is pronounced and to some persons not so agreeable as that of the pea and the bean. Its seeds have the following percentage composition: water, 8.4; protein, 25.7; fat, 1; carbohydrates, 59.2; and ash, 5.7, the fuel value being 1620 calories a pound. Like all legumes used as food, they are especially rich in protein. It is generally used for soup or purée. In the Mediterranean countries it is often eaten roasted. It has been little known in the United States, but with the growth of the foreign population its use has steadily increased. The lentils found in our markets are all imported, but the culture of this legume from European seeds is being tried in the Southwestern Territories and elsewhere. A small variety of lentil is already grown in New Mexico and Arizona as well as in Mexico, the seed of which was doubtless brought from Spain centuries ago by the ancestors of the present mixed race living there. See LATHYRUS.

LENTINI, lèn-tě'ně (Lat. *Leontini*). A city in the Province of Syracuse, Sicily, 18 miles by rail south of Catania (Map: Italy, E 6). The centre of the city is 3 miles from the railway station, and 6 miles from the coast. To the north lies Lake Lentini, from 9 to 12 miles in circumference, according to the height of the water. It did not exist in ancient times, but is now the largest body of standing water in Sicily, and its vapors make the city unhealthful

in summer. Lentini is a market for rice and other grain, oil, wine, flax, cattle, and for water-fowl and fish from the lake. It also manufactures pottery. The ancient Leontini was founded in 729 B.C., by colonists from Naxos and was the birthplace of Gorgias, the sophist and orator, who persuaded Athens to intervene in Sicily. Pop. (commune), 1901, 17,134, 1911, 22,904.

LENTINO, lén-tě'nó, JACOPO DA. One of the early Italian poets of the Sicilian school who lived during the first half of the thirteenth century. He is presumed to have studied at Bologna and lived in Tuscany for at least a part of his life. He is spoken of by Dante in doubtful terms (*Purgatory*, c. xxiv) for the carelessness of his language, but some of his poems, translated by Rossetti in *Dante and his Circle*, have much charm. Consult Gaspary, *Die siciliansche Dichterschule des dreizehnten Jahrhunderts* (Berlin, 1878), and a critical edition of poems, by Langley (Boston, 1915).

LENTO, lén'tó (It., slow). In music, a term indicating a tempo between grave (q.v.) and adagio (q.v.).

LENTULUS. A well-known cognomen of the Gens Cornelia in ancient Rome. The best-known members of this branch of the famous patrician gens were the following. 1. P. CORNELIUS LENTULUS SURA, quaestor under Sulla in 81 B.C., praetor in 75, and consul in 71. In 70 B.C., along with many others, he was expelled from the senatorial order by the censors, for his vices. He became praetor again in 63 B.C., the year of Cicero's consulship, when he joined in Catiline's conspiracy and was the leader of the conspirators within the walls when Catiline left to take the lead in the field. Cicero, however, obtained full proofs of the conspiracy from the ambassadors of the Allobroges; and when Lentulus and his comrades were confronted with the evidence, they were forced to confess their guilt. Lentulus himself resigned his office and was put to death along with the other leaders in the Tullianum. Consult the third and fourth *Catullianum Orations* of Cicero. 2. P. CORNELIUS LENTULUS SPINTHER, a friend of Cicero, only a very distant relative of the above. He was curule aedile in 63 B.C. (the year of Cicero's consulship), the conspirator Lentulus was given into his custody after his arrest. He was praetor in 60 B.C. and consul in 57, when he procured Cicero's recall from exile. From 56 to 53 he was governor of Cilicia and Cyprus. In the following years he followed the fortunes of Pompey. We have no sure knowledge of the end of his life. 3. P. CORNELIUS LENTULUS CRUS, or CRUSCELLO, chief accuser of Publius Clodius in connection with the violation of the rites of the Bona Dea. (See *CLODIUS PULCHER*.) As consul in 49 B.C., he bitterly opposed all attempts to reach a peaceful settlement with Caesar. When Caesar crossed the Rubicon, however, Lentulus fled to Greece. After Pompey's defeat at Pharsalus, Lentulus fled to Rhodes, Cyprus, and finally Egypt, where he was put to death by Ptolemy. 4. Son of 2, of the same name, also a follower of Pompey. Pardonned by Caesar, he finally joined Brutus and Cassius in their campaigns and coined silver money for the payment of their troops, specimens of which are common.

LENZ, lén-ts, JAKOB MICHAEL REINHOLD (1751-92). A German poet and dramatist, born at Seeswegen, Livonia. After studying at Königsberg he went to Strassburg in 1771 as tutor

to two young noblemen from Courland. At Strassburg he allied himself to the literary coterie of which Goethe was a member. In 1776 he followed Goethe to Weimar, where, despite his friends' remonstrances, he showed such utter disregard for social conventions that he was continually in trouble. Finally he was banished from Weimar, wandered in various countries, became insane, and died an object of charity in Moscow. Lenz was one of the most typical examples of the poets of the Storm-and-Stress Period. In his works he railed against the blind servitude to French classicism, in his life he proclaimed the right of nature against conventionality. He was a gifted but wayward writer. He has been ranked next to Goethe—*longo aed proximus intervallo*, however, as Erich Schmidt has written—among the dramatists of the Storm-and-Stress. His *Der Hofmeister* and some of his lyrics were by many of his contemporaries attributed to Goethe. His shorter poems often contain passages of exquisite lyric beauty. Consult Ludwig Tieck, *Gesammelte Schriften von Lenz* (Berlin, 1819); Erich Schmidt, *Lenz und Klinger* (ib., 1878); Johann Fritzsche, *Lenz und Goethe* (Strassburg, 1891); M. N. Rosanow, *J. M. R. Lenz, Leben und Werke*, German translation by Gützw (Leipzig, 1909). Among his dramas may be mentioned *Der Hofmeister* (1774), *Die Soldaten* (1776), and the dramatic sketch *Pandemonium germanicum* (1819).

LENZ, Max (1850-). A German historian. He was born at Greifswald and studied at Bonn, Greifswald, and Berlin. In 1881 he was made professor of mediæval and modern history at Marburg, seven years later went to Breslau, and in 1890 to the University of Berlin, of which he was rector in 1911-12. Among his works may be mentioned: *Drei Traktate aus dem Schriftenszyklus des Konstanzer Konzils untersucht* (1876); *Die Schlacht bei Mühlberg* (1879); *Briefwechsel Landgraf Philipps des Grossmütigen von Hessen mit Bucer* (3 vols., 1880-91); *Martin Luther* (1883; 3d ed., 1897); *Zur Kritik der Gedanken und Erinnerungen des Fürsten Bismarck* (1899); *Die grossen Nächte* (1900); *Geschichte Bismarcks* (1902; 3d ed., 1911); *Napoleon* (1905; 2d ed., 1908); *Geschichte der Universität Berlin* (4 vols., 1910).

LENZ, OSKAR (1848-). A German geographer and explorer, born in Leipzig and educated in the university there (1866-70). As a member of the Austrian Geological Institute, he went on geological expeditions in Croatia, Hungary, and Bohemia, and assisted Hochstetter in preparing *Die zweite deutsche Nordpolfahrt* (1874). In 1874 he went on a scientific expedition for the German African Company and spent three years in West Africa. On a second journey, in 1880, he crossed the western Sahara in the disguise of an Arab merchant, reaching Timbuktu. In 1886 he undertook an expedition for the relief of Junker, Casati, and Lupton, who were penned up by the Mahdi revolt. On this journey he made valuable discoveries in East Africa, especially around the sources of the Nile. He returned to Austria in 1887 and became professor of geography in the German University of Prague, where he was rector in 1902-03. He retired in 1909. His African tours are described in *Skizzen aus Westafrika* (2d ed., 1878); *Timbuktu: Reise durch Marokko, die Sahara und den Sudan* (2 vols., 1884), which contains many valuable contributions to our

knowledge of the Sahara; and *Wanderungen in Afrika* (1895). His later works are: *Die sogenannten Zwergvölker Afrikas* (1894); *Ueber Geld bei Naturvölkern* (1895); *Ophir und die Ruinen bei Simbady* (1896); "Geographie von Afrika," in Andree, *Handbuch der Geographie* (1899); *Marokko, Geschichte, Land, und Leute* (1907).

LEO (Lat., lion). The fifth sign of the zodiac through which the sun moves during the latter part of July and the early part of August; its conventional symbol is ♌. It is also the name of a zodiacal constellation lying to the south of Ursa Major and immediately north of the equator. Its two brightest stars are α Leonis, or Regulus, a helium star of magnitude 1.3, lying almost on the ecliptic, and β Leonis, or Denebola, a blue star of magnitude 2.2.

LEO. The name of 13 popes.—**LEO I, SAINT** (Pope, 440–461), surnamed "the Great," one of the most eminent of the Latin fathers. He was born in Tuscany. By Pope Celestine I (422–432) he was made one of the seven Roman deacons. His influence is attested by Cassian's dedication to him of his *De Incarnatione contra Nestorium* (430), and Cyril of Alexandria appealed to his aid against Bishop Juvenal of Jerusalem, who desired to be made a patriarch (431). The Emperor Valentinian III sent him on an embassy to Gaul, while absent on which he was elected Pope. Leo's letters, addressed to all parts of the Church, exhibit prodigious activity and zeal, and are used by Catholic controversialists as an evidence of the extent of the jurisdiction of the Roman see at this early time. In a council held at Rome in 449 he set aside the proceedings of the so-called Robber Synod of Ephesus, which had been held that year and had pronounced in favor of Eutyches (q.v.), summoned a new council at Chalcedon, in which his legates presided, and in which Leo's celebrated "dogmatical letter" was accepted "as the voice of Peter" and adopted as the authentic exposition of the orthodox doctrine on the person of Christ. The history of Leo's interposition with Attila (452) in defense of the Roman city and people will be found in the article **ATTILA**; and his subsequent similar interposition with Genseric (455), if less dramatic in the incidents with which history or legend has invested it, was at least so far successful as to save the lives of the citizens, and the public and private buildings of the city of Rome. He formulated clearly the monarchical idea of the papacy, which he conceived to be built upon Peter and the divinely constituted head of the Christian world. Accordingly he acted consistently in the character of universal bishop. He regulated affairs in Africa no less than in Gaul and Spain. When he found that the Council of Chalcedon (451) had put Constantinople above all other apostolic patriarchates, he required the Emperor to cancel the offensive 28th canon, and as the Emperor declared that its confirmation depended upon the Pope, Leo asserted that the Greeks had given it up. Leo endeavored to extirpate heresy (Manichæism, Priscillianism), but rather unsuccessfully. He died in Rome, Nov. 10, 461. His day is April 11 in the Latin church, and February 18 in the Greek church. His sermons and letters, of great interest and value, are in Migne, *Patrologia Latina*, liv–lvi, and a partial English translation in *Nicene and Post-Nicene Fathers*, 2d series, xii.

Bibliography. W. A. Arendt, *Leo der Grosse und seine Zeit* (Mainz, 1835); E. Perthel, *Papst Leos I. Leben und Lehren* (Jena, 1843); C. H. Gore, *Leo the Great* (London, 1880); F. Langen, *Geschichte der römischen Kirche von Leo I. bis Nicolaus I.* (Bonn, 1885); H. K. von Hefele, *History of the Christian Councils*, vols. iii–iv (Edinburgh, 1882, 1895); H. H. Milman, *History of Latin Christianity*, vol. i (New York, 1903).

LEO II, SAINT (Pope, 628–683). He was born in Sicily. He confirmed the canons of the Council of Constantinople (680–681), and the condemnation of Pope Honorius for "not extinguishing the flame of incipient heresy." He succeeded in healing the schism between the sees of Rome and Ravenna, through an arrangement by which the bishops of Ravenna were to be ordained at Rome and to be excused from the payment of the money fee previously exacted from them. He was the friend and patron of Church music and aided in the improvement of the Gregorian chant. His day is June 28. His letters are in Migne, *Patrologia Latina*, xcvi. Consult: H. K. von Hefele, *History of the Christian Councils*, vol. v (Edinburgh, 1896); H. K. Mann, *Lives of the Popes in the Early Middle Ages*, vol. i (London, 1902); H. H. Milman, *History of Latin Christianity*, vol. ii (New York, 1903).

LEO III (Pope, 795–816). His pontificate is chiefly remarkable as the epoch of the establishment of the new Empire of the West. He was a native of Rome. During the greater part of the eighth century the popes, through the practical withdrawal of the Byzantine emperors, had exercised a temporal supremacy in Rome, which was fully recognized by the gift of Pepin, the pontiffs being placed under the protectorate of the Frankish sovereigns, who received the title of patrician. The pontificate of Leo, however, was a troubled one, and in 799 he was nearly killed in a brutal attack and obliged to flee to Spoleto, whence he afterward repaired to Paderborn, in order to hold a conference with Charlemagne. On his return to Rome he was received with much honor by the Romans, and the chiefs of the conspiracy against him were sentenced to banishment. In the following year (800) Charlemagne, having come to Rome, was solemnly crowned and saluted Roman Emperor by the Pope, and the temporal sovereignty of the Pope over the Roman city and state, though under the suzerainty of the Emperor, was formally established. In 804 Leo visited Charlemagne at his court at Aix-la-Chapelle. With Charlemagne's successor, Louis le Débonnaire, Leo was embroiled in a dispute about the right of sovereign jurisdiction in Rome, which had not been brought to a conclusion when Leo died in Rome, May 25, 816. Consult: Ferdinand Gregorovius, *History of the City of Rome*, vol. ii (London, 1894); H. K. Mann, *Lives of the Popes in the Early Middle Ages*, vol. ii (ib., 1902–06), his letters in Migne, *Patrologia Latina*, cii.

LEO IV, SAINT (Pope, 847–855). He was a native of Rome. He built a new Roman suburb, occupying four years in the task, and it was named in his honor *Civitas Leonina*. He also restored Porta, a town near the mouth of the Tiber, where he colonized several thousand Corsicans who had been driven from their own country by an inroad of Saracens. He also founded a new town which was called Leopoliis, since destroyed. Consult: Ferdinand Gregor-

vius, *History of the City of Rome*, vol. iii (London, 1895); H. K. Mann, *Lives of the Popes in the Early Middle Ages*, vol. ii (London, 1902-06); H. H. Milman, *History of Latin Christianity*, vol. iii (New York, 1903); his works in Migne, *Patrologia Latina*, cxv, cxxix.

LEO V (Pope, 903), LEO VI (Pope, 928-929), LEO VII (Pope, 936-939). All these three held office in the darkest times of the papacy, when it was under the domination of turbulent and ambitious secular lords and women. Leo VII is said to have been a man of great personal holiness and austerity, and to have done much to restore monastic discipline. His letters are in Migne, *Patrologia Latina*, cxxxi. For the lives from Leo V to Leo VII consult: Ferdinand Gregorovius, *History of the City of Rome in the Middle Ages*, vol. iii (London, 1895); H. H. Milman, *History of Latin Christianity*, vol. iii (New York, 1903); H. K. Mann, *Lives of the Popes in the Early Middle Ages*, vol. iv (London, 1910).—LEO VIII (Pope, 963-965). These dates, however, must be taken with the qualification that his title to the papacy was not good until after the abdication in June, 964, of Benedict V, the legitimate successor of John XII, in whose place Leo was put by the Emperor Otto I.—LEO IX, SAINT (Pope, 1049-54). Bruno, son of Count Hugh of Egisheim, a cousin of the Emperor Conrad II. He was born in 1002 at Egisheim in Alsace and became a canon and then Bishop of Toul. He was instrumental in the negotiation of four treaties between the emperors and the kings of France, and was elected Pope by the influence of Henry III. He was a man of great erudition, and did much to correct abuses. His steadfast assertion of the prerogatives of his office was a preparation for the conflict waged by Henry VII against the Empire. He supported the Greek Emperor in southern Italy against the Normans, by whom he was captured and detained, though with every mark of respect, for nine months. Restored to Rome on becoming dangerously ill, he died in 1054, recognized already, by popular consent, as a saint. His day is April 19. His letters are in Migne, *Patrologia Latina*, cxlii. Consult: Hunkler, *Leo der Neunte und seine Zeit* (Mainz, 1851); J. I. Müller, *Geschichte der römischen Kirche*, vol. iii (Bonn, 1892); Ferdinand Gregorovius, *History of the City of Rome*, vol. iii-iv (London, 1895-96); H. H. Milman, *History of Latin Christianity*, vol. iii (New York, 1903); H. K. Mann, *Lives of the Popes in the Early Middle Ages*, vols. iv-vi (London, 1910).

LEO X (Pope, 1513-21). Giovanni de' Medici, the son of Lorenzo the Magnificent. He was born in Florence in 1475 and destined in childhood for an ecclesiastical career. His education was entrusted to the ablest scholars of the age; and through the influence of his father with Pope Innocent VIII he was created Cardinal at the age of 13 years, in 1488. In the expulsion of the Medici from Florence, in 1494, the young Cardinal was included, and he used the occasion as an opportunity of foreign travel. He was employed as legate by Julius II; and during the war with the French he was taken prisoner in the battle of Ravenna, but soon afterward effected his escape. On the death of Julius II, in 1513, he was chosen Pope at the early age of 37, and took the name of Leo X. His first appointment of the two great scholars Bembo and Sadoleto as his secretaries was a pledge of the

favor towards learning which was the characteristic of his pontificate; but he did not neglect the more material interests of the Church and the Roman see. He brought to a successful conclusion the Fifth Council of the Lateran and averted the schism which was threatened by the rival Council of Pisa. At the beginning of his reign his forces aided in driving the French from Italy, although in 1515 the new King, Francis I, restored the fortunes of France. In 1516 Leo concluded a concordat with Francis, which continued to regulate the French church till the Revolution. In the political relations of the Roman see he consolidated, and in some degree extended, the reconquests of his warlike predecessor, Julius II, although he used his position and his influence for the aggrandizement of his family. His desertion of the alliance of Francis I for that of his young rival, Charles V, although the subject of much criticism, was dictated by a sound consideration of the interests of Italy. But it is most of all as a patron of learning and art that the reputation of Leo has lived with posterity. Himself a scholar, he loved learning for its own sake, and his court was the meeting point of all the scholars of Italy and the world. He founded a Greek college in Rome, and established a Greek press, which he endowed munificently. (See LASCARIS.) In the encouragement of art he was no less munificent. Painting, sculpture, architecture, were equally favored; and it is to his vast project for the rebuilding of St. Peter's, and to the step to which he had recourse for procuring the necessary funds—his permitting the preaching of an indulgence, one of the conditions of obtaining which was the contribution to this work—that the first rise of the Reformation in Germany is ascribed. He himself seems to have regarded the movement as of little importance, describing it as "a squabble among the friars." In 1520 he issued a bull of excommunication against Luther, which the Reformer burned. Leo X's personal habits were in keeping with his taste, splendid and munificent in the highest degree. In his moral conduct he maintained a strict propriety, although he was not free from the stain of nepotism, the vice of that age, and his character was more modeled on the ideal of an enlightened prince than on that of a zealous and ascetic churchman. In days when the spiritual authority of the papacy was being questioned, his secular character was a great disaster to the Church. His death, which occurred rather suddenly on Dec. 1, 1521, during the public rejoicings in Rome for the taking of Milan, was by some ascribed to poison; but there seems no solid reason for the suspicion.

Bibliography. *Leonis X, Regesta*, ed. by Cardinal Hergenröther (8 vols., Freiburg, 1884-91); William Roscoe, *Life and Pontificate of Leo X* (2 vols., New York, 1886); F. S. Nitti, *Leone X e la sua politica* (Florence, 1892); Conforti, *Leone X ed il suo secolo* (Parma, 1896); Mandell Creighton, *History of the Papacy*, vol. vi (London, 1901); Ludwig Pastor, *History of the Popes*, vol. vii (3d ed., ib., 1908); *Cambridge Modern History*, vol. ii (Cambridge, 1914); H. M. Vaughan, *The Medici Popes* (New York, 1908).

LEO XI (Pope, 1605). Alessandro Ottaviano de' Medici. He was born in Florence in 1535 and made Bishop of Pistoia in 1573, Archbishop of Florence and Cardinal in 1574, holding later the cardinal-bishoprics of Albano and Palestrina.

Clement VIII intrusted him in 1596 with the difficult mission to the court of France, soon after the conversion of Henry IV, and he acted for the holy see in the conclusion of the Peace of Vervins. He became Pope on April 1, 1605, but reigned only 26 days. Consult Leopold von Ranke, *History of the Popes*, vol. ii (London, 1908).

LEO XII (Pope, 1823-29). Annibale della Genga. He was born near Spoleto in 1760 and educated in Rome for the priesthood, which he received in 1783. After serving as chamberlain and secretary to Pius VI he was made titular Archbishop of Tyre in 1793 and appointed Nuncio at Cologne, though the fortunes of war obliged him to change his residence several times. Under Pius VII he was employed on diplomatic missions in Germany, and after Napoleon's fall was the bearer of the Pope's congratulations to Louis XVIII. He was made Cardinal in 1816, and held the bishopric of Sinigaglia until 1820, when he returned to Rome as Cardinal Vicar. In 1823 he was elected to succeed Pope Pius VII. His pontificate was marked by great zeal for the welfare of the Church, both in Europe and abroad, and by great efforts to reform the abuses of the Church. Consult: Artand de Montor, *Histoire du pape Léon XII* (2 vols., Paris, 1843); N. P. S. Wiseman, *Recollections of the Last Four Popes* (London, 1858); F. Nippold, *The Papacy in the XIX Century* (New York, 1900); F. K. Nielsen, *The History of the Papacy in the XIX Century* (ib., 1906); *Cambridge Modern History*, vol. x (Cambridge, 1907).

LEO XIII (Pope, 1878-1903). Gioacchino Vincenzo Raffaello Luigi Pecci. He was born in the ancestral seat of his family at Carpineto, 37 miles from Rome, March 2, 1810, and educated in the Jesuit college at Viterbo and the Collegio Romano, making further studies in law and theology after taking his doctor's degree from the latter. He was ordained priest and made a domestic prelate by Gregory XVI in 1837. As delegate successively at Benevento, Spoleto, and Perugia, he displayed great energy, and was especially successful in the task of suppressing brigandage. In 1843 he was made Archbishop of Damietta *in partibus*, and sent as Nuncio to Brussels, where he exercised a powerful influence in the support of the Church against secularist attacks. At the end of 1845 he was recalled to undertake the administration of the see of Perugia, and made his entry there the following summer amid universal rejoicings. He ruled his diocese with great zeal, promoted education, and cared for the material wants of the poor by founding *monti di pietà* (loan associations under ecclesiastical direction). The year of revolutions (1848) brought many troubles to the Church in Perugia as elsewhere, which were met by the Archbishop with increased zeal and devotion. His services were recognized by Pope Pius IX, who made him Cardinal in 1853, carrying out an intention expressed by Gregory XVI before his death. He was not, however, prominent in the papal councils, being supposed to be hardly a *persona grata* to the powerful Antonelli. He continued his labors at Perugia under difficulties which increased after the annexation of Umbria to the dominions of Victor Emmanuel in 1860 and the promulgation of numerous laws inimical to religious interests. He raised his voice in energetic protest against what he considered the spoliation of the Church and against tampering with the law of marriage

and declined to join in a public reception to Victor Emmanuel when he visited Perugia. In 1877 he was brought to Rome to fill the important office of Cardinal Camerlengo, and a few months later, on the death of Pius IX, was called upon to perform the administrative functions attached to it during a vacancy in the holy see. On Feb. 20, 1878, he was chosen to fill the vacancy, taking the title of Leo XIII in imitation of the Pope of his boyhood.

The combined learning, holiness, and statesmanlike sagacity displayed by him made his long, almost unprecedented reign one of the most notable in the recent history of the Church. The great causes to which he devoted the last quarter century of his life are best marked by the numerous well-considered encyclicals in which he spoke through the Catholic hierarchy to the world. His first dealt with the study of theology and commended the system of St. Thomas Aquinas, the study of whose works he did all in his power to encourage, as the best means of meeting the needs of modern philosophy. In later ones he dealt acutely and broadly with social questions, the famous *Rerum Novarum* of 1891 being regarded as going a long way to meet the claims of modern socialism. Those on Christian marriage (1880) and on Freemasonry (1881) were more on traditional lines, but one which commended the diligent study of the Bible (1893) and those of 1894 and 1896 on the reunion of Christendom were of a nature to surprise and conciliate those who had no accurate knowledge of the teaching of the Roman Catholic church. The restoration of Christian unity had always been specially near his heart. He displayed a particular interest in the English-speaking race, addressing a letter *ad Anglos* in 1894; and the decision of the commission which in 1896 pronounced that Anglican ordinations were invalid had an important bearing on the attitude of the High Church party towards Rome. His recognition of the importance of this race, especially in the New World, was marked by the establishment of a permanent representative in the United States and one in Canada who were responsible immediately to him.

He maintained the same attitude of his predecessor towards the Italian government, considering it as a usurper in Rome and himself as a prisoner in the Vatican. Elsewhere his general policy was to support existing governments whenever they stood for law and order. Thus, though with some difficulty, he persuaded French Catholics to support the Republic; and he condemned the Nationalist plan of campaign in Ireland. The Kulturkampf (q.v.) waged by the Prussian government against the holy see was brought to a close in 1887, the papacy issuing from it triumphant. Leo XIII reestablished the ancient hierarchy of Scotland in 1878, and also established one in India. His constant efforts were devoted to the promotion of peace in the temporal order throughout the world; in 1885 he was able to secure it in a definite case by acting as arbitrator in the dispute which arose between Germany and Spain concerning the Caroline Islands. His life was of the simplest and most abstemious description, which doubtless had much to do with its prolongation. His interest in science and literature was always great, and marked, e.g., by the provision of large sums for the Vatican Observatory. In 1883 he threw open the Vatican archives to all properly

qualified scholars, expressing the conviction that the Church had nothing to fear from the study of the facts of history. His Latin style is of a high order, both in prose and verse; the composition of Latin poetry was one of his favorite relaxations. He died July 20, 1903. His pontificate was one of the longest in history, its silver jubilee having been celebrated on March 3, 1903.

Bibliography. Biographies by Bonghi (Città di Castello, 1884); Weinand (2d ed., Cologne, 1892); Hall (New York, 1899); Narfon (Eng. trans., London, 1899); Justin McCarthy (2d ed., London, 1903); B. O'Reilly (2 vols.; 2d ed., Chicago, 1903); Furey (New York, 1904); T'Serclaes (ib., 1904); Spahn (Munich, 1905); also Keller, *Life and Acts of Leo XIII* (New York, 1887); Boyer d'Agen, *Le prélat de Léon XIII* (ib., 1902); Goetz, *Leo XIII, seine Weltanschauung und seine Wirksamkeit* (Gotha, 1899); Boyer d'Agen, *La jeunesse de Leo XIII* (Paris, 1907). An edition of his *Carmina* was published in 1883; also *Poems, Charades, and Inscriptions of Pope Leo XIII* (ed. Henry, Philadelphia, 1902). His encyclicals have been published in Latin and German (Freiburg, 1878-1904), also *The Great Encyclicals of Leo XIII*, ed. by Wynne (New York, 1902).

LEO I (c.400-474). Byzantine Emperor from 457 to 474. He was born in Thrace and ascended the throne at the close of the peaceful reign of Marcian, for, though only an obscure military tribune at the time, he was the favorite of the all-powerful Aspar, commander of the guards. He undertook, together with Anthemius, whom he had made Emperor of the West, an expedition to reconquer Africa, which at this time was held by the Vandals under Genseric (q.v.). The Roman fleet was destroyed by fire ships. Aspar, being an Arian, was unpopular, and hence was suspected by the people of having had treasonable dealings with the Vandals, who were also Arians. Leo, glad of the opportunity to get rid of his too powerful subject, had him treacherously murdered in 471. Leo has been generally called the Great, but this title was given to him merely on account of his orthodoxy. With more justice the Arians surnamed him Makelles (butcher). In 473 he associated with himself his grandson, Leo II, who, however, survived him only a few months. Consult: J. B. Bury, *Later Roman Empire*, vol. i (New York, 1899); *Cambridge Medieval History*, vol. i (ib., 1911); Edward Gibbon, *Decline and Fall of the Roman Empire*, vol. iv (ed. by J. B. Bury, London, 1912).

LEO III (c.680-740). Byzantine Emperor from 717 to 740. He was surnamed "the Isaurian" from his birthplace. Originally his name was Conon, which he dropped in later life. Early in life he had distinguished himself as a soldier. Anastasius II appointed him in 713 general of the Anatolic theme. After the deposition of Anastasius by Theodosius III, Leo overthrew the usurper, and assumed the crown, in March, 717. He was scarcely seated on the Imperial throne when the forces of the Caliph Solyman laid siege to Constantinople by land and sea; this siege lasted for over a year, but was finally raised through the energy of Leo. In the great battle of Acroinon, in 739, he destroyed a large Mohammedan army and checked for many years the advance of Islam. He made many administrative reforms, completed the reorganization of the themes, reconstituted the army, placed the finances upon a firmer basis,

and published codes of law for the army, for agriculture, and for commerce, as well as the civil code, the *Ecloga*. He is best remembered, however, by his strife against the use of images in the churches. (See *IMAGE WORSHIP*.) Leo's edict against the images caused insurrections in Greece, which were soon repressed; but in Italy the opposition, headed by the Pope, was more vigorous and could not be subdued. Leo retaliated by confiscating the lands of the papacy in the Greek Empire and by placing the whole of Sicily and southern Italy, which had previously been under the authority of the Pope, under the Patriarch of Constantinople. This caused almost a complete rupture between the Pope and the Emperor. Consult J. B. Bury, *Later Roman Empire*, vol. ii (New York, 1899), and Edward Gibbon, *Decline and Fall of the Roman Empire*, ed. by J. B. Bury, vol. v (London, 1912).

LEO V, FLAVIUS (?-820). Byzantine Emperor from 813 to 820. He was surnamed "the Armenian" from his native country. He rose to the rank of general and was raised to the Imperial office by the army. In 813 he decisively defeated the Bulgarians at Mesembria. He was an iconoclastic prince of the most pronounced type, caused the adoration of images to be abolished by the Second Synod of Constantinople in 815, and condemned to punishment those who persisted in it, exiling the Patriarch Nicephorus for the same cause. The weight of public sentiment was against him. He arrested Michael, surnamed "the Stammerer," who had engaged in treason, notwithstanding his former valuable services, and condemned him to death; but on Christmas, 820, while he was in the chapel of his palace, he was murdered by the adherents of Michael. His reign is remarkable chiefly for the strict discipline which was infused by him into the administration of the civil government. Consult J. B. Bury, *History of the Eastern Roman Empire* (New York, 1912).

LEO VI, FLAVIUS (866-911). Byzantine Emperor from 886 to 911. He was the son of Basil I, whom he succeeded. His reign was marked by a succession of reverses. Sicily was definitively lost, and the Empire was ravaged in many parts by the Mohammedans. Leo wrote poems and theological treatises, and he completed the law code known as the *Basilica*. He had been tutored in his youth by the famous Photius, Patriarch of Constantinople, whom, however, he deposed as soon as he assumed the reins of government. He was surnamed Sapiens (the Wise) and Philosophus, though with little reason. Consult: Hergenröther, *Photius, Patriarch von Constantinople* (3 vols., Regensburg 1867-69); C. W. C. Oman, *Byzantine Empire* (New York, 1892); Krumbacher, *Geschichte der byzantinischen Literatur* (2d ed., Munich, 1897).

LEO, LA'Ö, FRIEDRICH (1851-1914). An eminent German classical scholar, born at Regensburg. He studied at the universities of Göttingen and Bonn and was professor successively at Kiel, Rostock, Strassburg, Bonn, and Göttingen. He was editor of *Seneca Tragædia* (1878-79), *Venantii Fortunati Opera Poetica* (1881), *Plauti Comædia*, vols. i, ii (1895-96); author of *Plautinische Forschungen* (1895; 2d ed., 1912), *Die plautinischen Cantioa und die hellenistische Lyrik* (1897), *Die griechisch-römische Biographie nach ihrer literarischen Form* (1901), *Der Saturnische Vers* (1905), *Der Monolog in Drama* (1908), *Geschichte der Römischen Literatur*:

Erste Band, Die Archaische Literatur (1913), and numerous philological papers. For years he was an editor of the philological periodical *Hermes*. Consult: J. W. D. Ingersoll, in *The Classical Weekly*, vol. vii (New York, 1914); W. M. Lindsay, in *The Classical Review*, vol. xxviii (London, 1914); P. Wendland, *Rede auf Friedrich Leo* (Berlin, 1914); M. Pohlenz, *Neue Jahrbücher für das klassische Altertum* (1914).

LEO, HEINRICH (1799-1878). A German historian, born at Rudolstadt. He studied at Jena, where he took an active part in the student association of the period and later went to Göttingen, also to Italy. In 1828 he became professor of history at the universities of Berlin and Halle. Among his early publications were *Lehrbuch der Geschichte des Mittelalters* (1830), *Geschichte der italienischen Staaten* (1829-30), and *Zwölf Bücher niederländischer Geschichten* (1832-35). In his subsequent works he changed his position, adopted Hengstenberg as his leader, and energetically attacked the ideas of Hegel, which he had previously advocated. Under the influence of this reactionary tendency he wrote *Lehrbuch der Universalgeschichte* (3d ed., 1849-55) and *Vorlesungen über die Geschichte des deutschen Volks und Reichs* (1854-66). He also published some works on Old Saxon and Old English, e.g., his *Beowulf* (1839) and his *Angelsächsisches Glossar* (2 vols., 1872-77). Consult his autobiography, *Aus meiner Jugendzeit* (Gotha, 1880), and Julian Schmidt, *Geschichte der deutschen Litteratur von Leibniz bis auf unsere Zeit* (Berlin, 1886-96).

LEO, LEONARDO (1694-1744). An Italian composer, born at San Vito degli Schiavi (Naples). He studied music at Naples under A. Scarlatti and Fago and at Rome under Pitoni. After having been maestro to the cathedral in Naples and at Santa Maria della Solitaria he was appointed court organist. As a teacher in the Conservatory of St. Onofrio at Naples he trained many distinguished musicians; but he is famous as an operatic composer, although his Church music is superior to his dramatic. He wrote about 60 operas, of which *Piastrato* (1714) was the first and *La contessa dell' amore colla virtù* (1744) was the last. Of his sacred compositions, which include oratorios, masses, motets, hymns, magnificats, etc., the best known is a *miserere* for eight-part choir a *cappella*. This has been frequently reprinted, but the bulk of Leo's work is still in manuscript. Consult Giacomo Leo, *Leonardo Leo* (Naples, 1905).

LE'O AF'RICAN'US (Lat., Leo the African; Ar. AL-HASAN IBN MOHAMMED AL-WAZZAN) (c.1485-?). An Arabian traveler and geographer, born in Granada, Spain. On the expulsion of the Moors from Spain his parents went to Morocco, where he received an excellent education. When only 16 years old, he began his travels, which extended through northern and central Africa and western Asia. While returning by sea from Egypt in 1517 he was captured by pirates, who presented him to Pope Leo X. In Rome he learned Latin and Italian and, becoming a Christian, took the name Leo Joannes in honor of the Pope, who was his sponsor. At Rome he taught Arabic to Cardinal Egidio, the same who was taught Hebrew by Elias Levita. His work *Description of Africa* was for a long time the only source for the geography of the Sudan. It seems that he wrote it first in Arabic; but the original is no longer extant, and

the author translated it himself into Italian (published by Ramusio, 1550). A Latin version was published by Florianus (Antwerp, 1556; Zurich, 1559; Leyden, 1632); a French version by Jean Temporal (Lyons, 1556; reedited with notes by Ch. Shefer in *Recueil de voyages*, No. 15, Paris, 1898); and a German version by Lorschach (Herborn, 1805). He also wrote *Tractatus de Vitis Philosophorum Arabum*, published by Hottinger (Zurich, 1664). He died in Tunis after 1526.

LEOBEN, lā-ō-ben. A mining town in the Crownland of Styria, Austria, situated on the Mur, 44 miles northwest of Graz (Map: Austria-Hungary, D 3). It is surrounded by old walls with towers and has an interesting fountain. It has a famous academy of mining (1913, 426 students) and a higher Gymnasium. In the vicinity are extensive mines of lignite, also iron-works. Leather, vinegar, dyes, and flour are produced. A marble monument commemorates the signing here, April 18, 1797, of the preliminaries of peace between Austria and the French Republic, which led to the Treaty of Campo Formio (q.v.). Pop., 1900, 10,204; 1910, 11,025.

LEOBSCHÜTZ, lā-ōp-shütz. A town in the south of the Province of Silesia, Prussia, on the Zinna River, 20 miles north-northwest of Ratibor (Map: Germany, G 3). It has manufactures of machinery, woollens, linen, damask, large bells, bricks, lumber, glass, mineral water, malt, and beer. Pop., 1900, 12,627; 1910, 13,081. Leobschütz existed as early as the tenth century and was from 1524 to 1623 the capital of the Principality of Jägerndorf.

LEOCHARES, lē-ōk'ā-rēz (Lat., from Gk. Λεωχάρης). A famous sculptor, possibly an Athenian, who flourished about the middle of the fourth century B.C. That he worked much at Athens is shown by numerous inscriptions on the Acropolis that bear his name. One of his earliest works, the portrait of Isocrates, was made before 355 B.C., and he was one of the artists employed on the sculptures of the Mausoleum (q.v.), begun in 352 B.C. We hear of three statues of Zeus by him, one of which was subsequently placed on the Roman Capitol, where it is praised by Pliny as *ante cuncta laudabilem*. His most famous works seem to have been gold and ivory statues, executed for the royal family of Macedon, after the battle of Chæronea (338 B.C.). In the Philippeum at Olympia were five gold and ivory statues of Philip, Alexander, Olympias, Amyntas, the father of Philip, and his wife Eurydice. In collaboration with Lysippus (q.v.) he made the bronze group of the lion hunt of Alexander, which Craterus dedicated at Delphi in commemoration of his rescue of Alexander on such an occasion. Of this group the base, bearing an inscription, has lately been found. A reminiscence of this group seems preserved in a relief from Messene, now in the Louvre, and some authorities attribute one type of the portraits of Alexander to an original of Leochares. An undoubted copy of a work by this artist, though on a reduced scale, is the statuette group of "Ganymede Carried Off by the Eagle of Zeus," now in the Vatican. (For the original, consult Pliny, *Historia Naturalis*, xxxiv, 79.) Many very good authorities attribute to him the original of the Apollo Belvedere, and some also the Artemis of Versailles in the Louvre. Both these attributions are, however, doubtful.

Bibliography. Winter, in the *Jahrbuch des*

deutschen archäologischen Instituts, vol. vii (Berlin, 1892); Adolf Furtwängler, *Masterpieces of Greek Sculpture* (London, 1913); E. A. Gardner, *A Handbook of Greek Sculpture* (ib., 1911); H. H. Powers, *The Message of Greek Art* (New York, 1913); P. Gardner, *The Principles of Greek Art* (ib., 1914); the article "Leochares," in Friedrich Lübker, *Reallexikon des klassischen Altertums*, vol. ii (8th ed., Leipzig, 1914).

LEO DIACONUS (Lat., Leo the Deacon) (c.950-c.1000). A Byzantine historian. He was born at Calce in Ionia and came to Constantinople about 969, in which year he saw the deposition of Nicephorus Phocas. Twelve years afterward, as one of the court priests, he went with Basil II against the Bulgarians. His history contains valuable material for the years 959-973, but it is poorly written and patriotically partial. It is included in the Bonn *Corpus Historiæ Byzantinæ* (1828). Consult Ferdinand Hirsch, *Byzantinische Studien* (Leipzig, 1876), and Schlumberger, *Nicéphore Phocas* (Paris, 1890).

LEOMINSTER, lēm'stēr. A market town in Herefordshire, England, 12 miles north of Hereford, on the river Lug (Map England, D 4). It is the centre of one of the most celebrated cattle-breeding districts in Europe and has wool-stapling and leather establishments, manufactures of gloves and hats, and a trade in hops and cider. The town maintains markets and a free library. The parish church of SS. Peter and Paul, one of the finest in England, exhibits every style of architecture from Norman to Perpendicular. It also contains an ancient ducking stool. Leominster originated in a Saxon monastery and received its charter of incorporation from Queen Mary. Pop., 1901, 5900, 1911, 5737.

LEOMINSTER, lēm'in-stēr. A town, including several villages, in Worcester Co., Mass., 5 miles south-southeast of Fitchburg, on the Nashua River, and on the New York, New Haven, and Hartford and the Boston and Maine railroads (Map Massachusetts, D 2). It has a large public library, fine town hall and high-school buildings, and a park. The principal manufactures include piano cases, baby carriages, shirts, buttons, combs, horn goods, furniture, woolen goods, leatherboard, paper, paper boxes, chemicals, toys, novelties, etc. The government is administered by town meetings. The water works are owned and operated by the municipality. Pop., 1900, 12,392; 1910, 17,580; 1914 (U. S. est.), 19,789. Settled in 1725, Leominster was part of Lancaster until incorporated as a separate town in 1740. In 1873 it suffered severely from fire. Consult Emerson, *Leominster, Massachusetts* (Gardner, Mass., 1888).

LEÓN, or **LEÓN DE LOS ALDAMAS**, lā-ōn' dā lōs āl-dā'más. A city of Mexico, in the State of Guanajuato, 32 miles west of Guanajuato (Map: Mexico, H 7). It is a well-built town, situated in a rich agricultural district, and has a fine public square, a cathedral, convents and schools, and one of the largest and finest theatres in the country. León is a flourishing industrial centre and has an extensive commerce in wheat and other grains and manufactures leather saddlery, cottons, and woollens. Pop., 1900, 63,263; 1910, 57,722. The town was founded in 1576 and became a city in 1836.

LEÓN. A city of Nicaragua, finely situated

in a picturesque district, 13 miles from the Pacific coast and 45 miles northwest of Managua (Map: Central America, D 4). It has a cathedral, an episcopal palace, and a university. León was founded by Francisco Hernández in 1523, on the shore of Lake Managua, opposite Mount Momotombito, but was removed west in 1610 to its present site. It is connected by railway with the port of Corinto and has an active trade in produce of the region and imported articles. It was formerly the capital of the Republic and is still the largest city. Pop. (est.), 60,000, including the Indian suburb of Subtiaba.

LEÓN. A former kingdom in the northwestern part of Spain, embracing the modern provinces of Salamanca, Zamora, León, Valladolid, and Palencia, and bounded on the north by Asturias, on the east by Old Castile, on the south by Estremadura, and on the west by Portugal and Galicia. Its area is about 21,038 square miles. The river Duero crosses the region from east to west, among its affluents being the Esla on the right and the Tormes on the left. From the central valley the land rises in broad and level terraced plateaus towards the rugged granite mountains of the Sierra de Francia and the Sierra de Gata on the southern boundary; and a more uneven region, cut by narrow valleys, rises towards the lofty Cantabrian chain on the northern boundary. The climate is extremely varied, almost subtropical in the valley of the Duero, changing to a severe continental climate with not unusual snows on the southern highland and a more humid and unstable one towards the north. The vegetation varies as much as the climate; oranges, lemons, olives, and vines thrive in the central valley, while the slopes yield abundant crops of wheat and other cereals and a fine quality of flax. The whole region, with the exception of a sterile plateau in the northeast, is well watered, and the highlands are clothed with extensive forests, in which the oak, walnut, and chestnut are predominant. The mineral wealth is not very large except in the northwest, where considerable quantities of coal and iron and some copper are mined. The industries are unimportant, though there are some flour and textile mills and ironworks. Trade is more active, and the exports include coal, iron, building stone, timber, cork, hides and cattle, linen and woolen goods, olives, and wines. The inhabitants are of pure Spanish descent, proud, indolent, and ignorant, as well as hospitable and brave. Pop., 1887, 1,420,525; 1900, 1,453,527; 1910, 1,478,000.

History. León first appears in history as an independent kingdom about 910, when the Kingdom of Asturias (q.v.) was divided among the three sons of Alfonso III, García receiving León. It suffered in the following years to a great extent from the Arabs, for the various rulers were weak, and rebellions were frequent. The first signs of vigor appeared under Alfonso V (999-1027), who is known in Spanish history as the Restorer of León. In 1037 the male line of the house of León became extinct, and Ferdinand I, King of Castile, succeeded. His son, Alfonso VI the Valiant, wrested large territories from the Mohammedans. Until 1157 the history of León is a part of that of Castile (q.v.). In 1157 Alfonso VII of León and II of Castile (called by Mas La Trie Alfonso VIII because he counted Alfonso I of Aragón, husband of Urraca of León and Castile, as Alfonso VII), known as the Emperor, died, and León became

again an independent kingdom under his son Ferdinand. The latter's son was Alfonso VIII of León, who is usually known as Alfonso IX because his cousin Alfonso III of Castile is called Alfonso VIII in the total reckoning of the Alfonsos of León and Castile (a method of enumeration which has been adopted by the last two sovereigns and declines to follow Mas La Trie in including Alfonso I of Aragón in the sequence). Alfonso IX married his cousin Berengaria of Castile in 1197 without papal license, so that Innocent III placed the whole country under an interdict. For seven years the couple remained firm, but finally separated, and a long series of wars between León and Castile began. In 1214 Berengaria became Queen of Castile in her own right, but immediately abdicated in favor of the eldest son of her union with Alfonso of León, Ferdinand. In 1230 he also succeeded to the throne of León, ruling the two countries as Ferdinand III. León and Castile were never again separated. Alfonso X mounted the throne in 1252, and there has been no further dispute about the enumeration.

LEÓN. The capital of the ancient kingdom and modern Spanish province of the same name, situated near the confluence of the rivers Bernesga and Torio, in a beautiful wooded plain 81 miles northwest of Valladolid and on the railroad from the latter place to Gijón (Map: Spain, C 1). It is also an episcopal see. Part of the old Roman wall, 20 feet thick, is still standing, and outside of this is another wall built in the fourteenth century. The streets are crooked and narrow; but there are a number of interesting old buildings. The cathedral is a masterpiece of Gothic art. It was begun in the thirteenth century and finished at the close of the fourteenth, but, owing to a defect in its construction which threatened its ruin, an extensive restoration was begun in 1843. Those entrusted with the work showed such bad taste and such poor science that in 1869 it was necessary to begin a second restoration, which was carefully and systematically carried out for nearly 40 years. The interior is rich in sculptures and mural paintings and contains the tomb of King Ordoño II of León. The two other architectural monuments of León are the church of St. Isidore, in the Byzantine style of the twelfth century, containing the tombs of most of the kings of León, and the convent of San Marcos, also dating from the twelfth century, but rebuilt in 1514. The latter has a beautiful and richly sculptured façade and is the principal seat of the Order of Santiago in León; a part of it is now occupied by the municipal archaeological museum. Besides this museum, León has a number of educational institutions, such as the provincial library, the institute for secondary education, a normal school, and a veterinary school. The industry and trade of the city are unimportant. Pop., 1887, 13,446; 1900, 17,022; 1910, 18,117.

León was founded by the Romans as a military garrison and called *Legio Septima Gemina*, the word *legio* being later confused with *león*. It was twice captured and held by the Arabs in the ninth century, but recaptured, first by Alfonso I and the second time by Ordoño I. In the beginning of the tenth century Ordoño II made it the capital of the Kingdom of León. Even after that it was continually threatened, and once almost destroyed by the Arabs. In 1808 it was sacked by the French.

LEÓN, le'on. A city and the county seat of

Decatur Co., Iowa, 87 miles by rail south of Des Moines, on the Chicago, Burlington, and Quincy Railroad (Map: Iowa, D 4). It has considerable trade as the centre of a fertile agricultural, dairying, and stock-raising district, and has one of the largest poultry plants in the country. The water works are owned by the city. There is a Carnegie library and a fine courthouse here. Pop., 1900, 1905; 1910, 1991.

LEÓN, lá-on'. A town of Panay, Philippines, in the Province of Iloilo, situated about 14 miles northwest of Iloilo. Pop., 1903, 10,277.

LEÓN, ANTONIO (1794-1847). A Mexican soldier, born in Huajuapán. He was at first a Royalist, but afterward joined the insurgent forces and did valuable service for their leader Iturbide, who made him lieutenant colonel as a reward for his capture of Tehuantepec in 1821. But when Iturbide took part in the plan of Iguala and proclaimed the plan of Iguala, León supported General Bravo and the Republican opposition. Afterward he served in the Constituent Congress of 1824 as deputy from Oajaca. He took an active part in suppressing the numerous insurrections that followed the proclamation of the Republic, becoming brigadier general in 1843, at which time his fame among his countrymen was so great that the name of his natal village was changed to Villa de Huajuapán de León. Later he fought in the war with the United States at Padierna and Molino del Rey, where he was killed.

LEÓN, FRAY LUIS DE (?1528-91). A Spanish poet and mystic, born at Belmonte in Cuenca. He is the greatest of all the Spanish mystics, and one of the greatest of Spain's lyrical poets. He early entered the Augustinian Order, was trained at the University of Salamanca, and was there elected to the chairs of Thomistic philosophy and of theology. His abilities as a theologian and as a linguist soon gained him great repute. In 1572, however, he was accused of having impugned the validity of the Vulgate and of having violated the ecclesiastical law which forbade the publication of unauthorized translations of the Bible. It seems that he had rendered the Song of Songs (Song of Solomon) into Spanish for the benefit of a certain nun, but the publication had been brought about by an enemy without León's knowledge or consent. He was detained in prison at Valladolid until 1576, when he was discharged. He employed the period of his imprisonment in writing. When released, he was reinstated with honor in his post at Salamanca. He continued at Salamanca for some time, became vicar-general of his order, and finally (10 days before his death) provincial of the Augustinians of Castile. Besides works in Latin, León produced much in Spanish prose and verse. Of his works in prose the most important are the *Nombres de Cristo*, discussing the various appellations given to the Saviour in the Scriptures; the *Exposición del libro de Job*; a Spanish translation of his Latin commentary on the Song of Solomon; and a treatise on wifely duties, the *Perfecta casada*. In all these he displays the humanistic bent of one well acquainted with the Greeks and Latins. His poetry has an undying charm. Besides his original lyrics, his verse includes translations of classics (e.g., from Horace, Vergil, Tibullus, Pindar, Euripides, Seneca), modern works (*cantoni* of Bembo and Giovanni della Casa and imitations of Petrarch), and translations from

sacred sources (the Psalms, Job, Proverbs, the *Pange Lingua*, the Song of Solomon).

Bibliography. *Obras*, published in six volumes (Madrid, 1804-16, by Merino); the reprint by C. Muñoz Saez, Madrid, 1885, is careless; J. Gonzáles de Tejada, *Vida de Fray Luis de León* (Madrid, 1863); C. A. Wilkens, *Fray Luis de León* (Halle, 1866); *Colección de documentos inéditos para la historia de España*, vols. x-xi, F. H. Reusch, *Luis de León und die spanische Inquisition* (Bonn, 1873); M. Gutiérrez, *Fray Luis de León y la filosofía española* (Madrid, 1885); M. Menéndez y Pelayo, *Estudios de crítica literaria, Primera Serie* (ib., 1893); J. D. M. Ford, *Luis de León, the Spanish Poet, Humanist, and Mystic* (in the publications of the Modern Language Association of America, vol. xiv, No. 2). Henry Phillips (Philadelphia, 1883), Bryant, and others have made English verse renderings of some of León's lyrics. A very careful edition of the *Perfecta casada* (ed. by Miss Elizabeth Wallace) appeared at Chicago in 1903.

LEÓN, ISLA DE (known also as the ISLA GADITANA). A long, narrow island on the southwest coast of Spain, containing the cities of Cadiz and San Fernando (Map: Spain, B 4). It is 10 miles long and two broad and is separated from the mainland by the narrow deep channel of San Pedro, spanned by two bridges, one carrying a railroad. The surface of the island is flat and covered with sand dunes and salt marshes. Pop., 1910, 60,873.

LEÓN, lá-ón', LAKE. See MANAGUA.

LEÓN, lá-ón', MARIE JEAN. See HERVEY DE SAINT-DENYS, M. J. L., MARQUIS D'.

LEÓN, PEDRO DE CIEZA DE. See CIEZA DE LEÓN, PEDRO DE.

LEÓN, PONCE DE. See PONCE DE LEÓN.

LEONAI, or LEONNOYS See LYONNESSE.

LEONARD, lén'erd, DANIEL (1740-1829). An American jurist, born at Norton, Mass. He graduated at Harvard in 1760, studied law, was elected to the General Court, and was at first a stanch Whig. Becoming alarmed, however, at the lengths to which the Whigs seemed to be going, he became a Loyalist. In 1774-75 he published in a Boston newspaper a series of 17 papers over the signature *Massachusettsensis*, to which John Adams replied over the signature *Novanglus*. The papers dealt chiefly with the legal aspects of the rights of the British Parliament over the colonists and have been pronounced to be perhaps the clearest and strongest statement of the British position made anywhere in the Colonies. Though the authorship was not fixed upon him, a mob fired into his house at Taunton, and he was forced to remove his family to Boston in 1776. On the British evacuation in 1779 he accompanied the army to Halifax and went from there to London. His name was in the list of those sentenced to banishment by Massachusetts in 1778 and to confiscation of their property in 1779. For many years he served as Chief Justice of the Supreme Court of Bermuda, but died in London. Mr. Adams republished the controversy *Novanglus and Massachusettsensis* (Boston, 1819), but even at that date thought that the letters were written by Jonathan Sewall.

LEONARD, H. WARD (1861-1915). An American inventor and electrical engineer, born at Cincinnati, Ohio. He graduated from Massachusetts Institute of Technology in 1883 and became associated with Thomas A. Edison in the

following year. In 1887 he was appointed general superintendent of the Western Electric Light Company at Chicago and in the following year organized the firm of Leonard and Izard, which sold out to the Edison interests in 1889. Leonard then became general manager of the Edison interests in the United States and Canada. During his lifetime he patented more than 100 inventions. In 1891 he introduced his system of motor control and in 1892 completed a multiple voltage system, the efficiency of which was demonstrated on the U. S. S. *Brooklyn* during the Spanish-American War. A double-arm circuit breaker and a system of lighting trains and automobiles were also among his more important inventions. He received gold medals at the Paris (1900) and St. Louis (1904) expositions and the John Scott legacy medal of the Franklin Institute (1903).

LÉONARD, lá-ó-närt, HUBERT (1819-1890). A famous Belgian violinist, born at Bellaire, near Liège. After thorough preparation by a private teacher, Rouma, he entered the Paris Conservatory in 1836, where he was for three years a pupil of Habeneck. In 1844 he began his extended concert tours, which quickly established his reputation as one of the greatest of virtuosos. From 1848 to 1867 he held the position of principal professor of violin playing at the Conservatory of Brussels, having succeeded the celebrated De Bériot (q.v.). Owing to ill health, he resigned this post and settled in Paris, where he devoted the greater part of his time to private teaching. His compositions, which are almost exclusively for violin, make great demands upon the technical skill of the performer, but are lacking in depth of expression. Of permanent value are his instructive works, notably his *Ecole Léonard*.

LEONARDO ARETINO, lá-ó-när'dó á'rä-té'nó See AREZZO.

LEONARDO DA VINCI, lá-ó-när'dó dá vén'ché See VINCI, LEONARDO DA.

LEONARDO OF PISA. See FIBONACCI.

LEONA VICARIO, lá-ó-ná vé-kä'ryó. See SALTILLO.

LEONCAVALLO, lá-ón-ká-väl'ló, RUGGIERO (1858-). An Italian composer, born in Naples and educated at the conservatory of music in that city. Together with Mascagni (q.v.) he labored zealously for the advancement of the newer Italian music, and although educated under such conservative Italian teachers as Peri, Simonetti, and Ruta, he, more than any other Italian dramatic composer of his day, gave evidence of German influence. He was an enthusiastic admirer of Wagner and under his encouragement began the trilogy *Crepusculum*, an historic play of the Italian Renaissance, the preparation for which occupied him six years. Only the first part of this, *I Medici*, was completed. The failure attending its first performance in 1893 discouraged him from writing the music for the other two portions, *Savonarola* and *Cesare Borgia*. Perhaps a second reason for abandoning his trilogy is to be found in the overwhelming success of his *Pagliacci* (1892), which showed him in what field his real strength lay. In 1896 he brought out *Chatterton*, his earliest opera (written in 1878), but it proved a failure. *La Bohème* (1897) had some success, but had the misfortune of being produced a few months after the triumph of Puccini's opera treating the same subject. *Zaza* (1900) met with considerable favor. *Der Roland von Berlin*

Geschichte nebst Quellenkunde (5th ed., Munich, 1914).

LEONIDAS II (c.285–236 B.C.). King of Sparta. He was a son of Cleonymus and served abroad under the kings of Syria and Egypt. He brought back to Sparta an Eastern wife and Eastern ideas and was dethroned by the ephors (241) because of his opposition to the reforms of King Agis IV. (See Agis, 4.) He came back to power in 240 after a brief exile at Tegea, put King Agis to death, and ruled alone for four years in a tyrannical and despotic manner. He was succeeded by his son, Cleomenes II.

LEONIDAS OF ALEXANDRIA. A Greek poet under Nero and Vespasian. In the Greek anthology 43 epigrams of very little merit are ascribed to him.

LEONINE CITY (It. *Città Leonina*). A part of Rome on the right bank of the Tiber, embracing the Vatican, the castle of Sant' Angelo, and the poor quarter called the Borgo. It was inclosed by Leo IV with high walls as a defense against the Saracens and became a refuge for the popes in later times. It was destroyed after the fall of Rienzi, but was restored during the next century. It now forms the fourteenth ward of modern Rome.

LEONINE VERSES. The name given to the hexameter and pentameter verses, common in the Middle Ages, which rhymed at the middle and end. They are said to have been so named after a canon of the church of St Victor in Paris, about the middle of the twelfth century, or, according to others, after Pope Leo II, who was a lover and improver of music. But leonine verse can be ascribed to no single man as the inventor. It is rather one of the incidentals in the passage from the quantitative verse of the ancients to the accented verse of modern literature and still more from nonrhyming to rhyming verse. Indeed, traces of leonine verse appear even in the Roman poets themselves, especially in Ovid's *Epistles*. In the Middle Ages it was widely employed in Latin hymns and secular poetry, in epitaphs and epigrams. An analogous effect is produced in English poetry by the use of rhyme in the middle of the line. It was employed with effect by Tennyson in "The Bugle Song"—

"The splendour falls on castle walls,"

and earlier by Shelley in "The Cloud"—

"That orb'd maiden with white fire laden"

It is perhaps oftener used by Kipling than by any other English poet.

LEONNATUS (Lat., from Gk. Λεοννάτος) (?–322 B.C.) A Macedonian commander. He was one of the generals who avenged the death of Philip upon his assassin Pausanias (Diodorus, xvi, 94). He accompanied Alexander the Great in his invasion of Persia in 334 B.C., and it was through his personal bravery that Alexander's life was saved during the attack on the city of the Malli. At the death of his chief he obtained the satrapy of Phrygia Minor, but was killed in the battle near Lamia while aiding Antipater against the revolted Greeks. See LAMIAN WAR.

LEÓN PINELO, lá-ón pé-ná'lô, ANTONIO DE. A Spanish author of the seventeenth century. He was born at Córdoba, Peru (now Argentina), in the last quarter of the sixteenth century, and died in 1660. He studied law in Lima, but spent the greater part of his life in Spain, where he

was prominently connected with the administration of Spanish colonies as member of the Supreme Council of the Indies up to 1653. At that date he became judge of the Contratación in Cadiz. Before leaving South America he had examined with great care all the archives of Peru and Mexico, and during the whole of his long residence in Spain he was indefatigable in his studies in the archives of Madrid, Simancas, etc.—the sources of his vast knowledge concerning the history and bibliography of the Americas. His more important works were *Epítome de la biblioteca oriental y occidental, náutica y geográfica* (Madrid, 1629, rev. by De Barcia, 1737–38), which is the earliest bibliography of the sciences, mines, and the great colonial code, *Tratado de las leyes de Indias* (4 vols., published after his death, ib., 1680). For a further list of his works, the reader should consult Nicolás Antonio, *Bibliotheca Hispana Nova*, vol. i (ib., 1684).

LEON'TES. The King of Sicily in Shakespeare's *Winter's Tale*. See PERDITA.

LE'ONTI'NI. The ancient name of Lentini (q.v.), a city in Sicily.

LEON'TIUM. See HERMESIANAX.

LEONTIUS (lê-ôn'shi-ûs) **OF BYZANTIUM**, bi-zân'shi-ûm (c.485–c.543). An ecclesiastic of very uncertain date. Many works of about the same date bear the name Leontius, with the epithets *Byzantinus*, *Cyprius*, *Hierosolymitanus*, *Presbyter et Abbas Sancti Sabae*, and *Neapolitanus*. It is possible that these epithets, with the exception of *Neapolitanus* and *Cyprius* (which refer to a bishop of Naples and Cyprus, of the seventh century, author of a life of St. Simeon), were used by a monk born at Byzantium and a teacher there, and afterward a priest at the abbey of St. Sabas near Jerusalem. There is further confusion possibly with a Scythian monk of the same name, if not, we must suppose that the Byzantine monk lived in Scythia, was originally a Nestorian—although he afterward attacked this sect—and that he came to Rome and Constantinople about 519 with Scythian monks who took part in the theopaschitic controversy. Leontius is supposed to have introduced Aristotelian definitions into theology. He wrote *De Sectis*, or *Scholias* in ten sections (ᾠδαίς), of which a later recension is published in Galland's *Bibliotheca Patrum*, vol. xii (1778), a valuable history of heresy, and *Contra Eutychianos et Nestorianos et Adversus Argumenta Severi*. Consult Loofs, *Leben von Leontios* (1887).

LEONZIO PILATO, lá-ôn'tsá-ô pé-lá'tô, or LEO PILATUS (?–c.1366). A Calabrian scholar, famous as one of the early introducers of Greek studies into Italy. Discovered by Boccaccio in Venice, he came as Boccaccio's guest to Florence in 1360 and was employed by the Republic as a teacher of Greek. He made for Boccaccio the first modern translation of Homer into Latin and was the first to lecture in public upon the great poet in western Europe. Returning to Venice, he met Petrarch, then a pupil of Barlaam. From Venice he went to Constantinople, intending to return to Italy, but he was struck by illness on the voyage across the Adriatic (c.1366). He assisted Boccaccio with the materials for much of the latter's erudition, and it was Boccaccio's excess of confidence in Leonzio—more or less a charlatan and not skilled in classic Greek—that led the humanist to introduce many errors into his work. Consult Georg

Voigt, *Die Wiederbelebung des klassischen Altertums*, vol. ii (3d ed., Berlin, 1893).

LEOPARD, lēp'ard (OF. *leopard*, Fr. *léopard*, from Lat. *leopardus*, from Gk. λεοπαρδος, λεοντοπαρδος, *leontopardos*, leopard, from λέων, *leōn*, lion + παρδος, *pardos*, pard). The leopard (*Felis pardus*) ranks third in size among the Old World cats, but has the widest distribution of all. In all its history the name leopard has been confused with the words pard and panther, and even at the present day it is a common belief that a pard is a panther and that the latter is a different animal from the leopard. Among sportsmen it has been customary to use the term "panther" for all unusually large leopards. As a matter of fact the leopard was called pard or panther by the ancients, and the word leopard was probably originally applied to the cheeta (q.v.), but was incorrectly transferred to the panther and has now almost wholly superseded that name.

Although exceeded in dimensions by the lion and tiger, the leopard ranks with them in grace, quickness, and ferocity. It is the most variable in color and size of all the large cats, a fact no doubt due to its extensive range, for the leopard is found throughout the continent of Africa, and from Palestine to northern China and Japan, and in Borneo, though it is not found north of the Himalayas. Mivart gives the average length of the body and head as about 3 feet, 10 inches, and of the tail as 3 feet, 8 inches. The pupil is round. The color of the leopard is buff of some shade, sometimes tawny, sometimes rufous, passing into white on the under parts and on the inner sides of the limbs; everywhere are spots, comparatively small, roundish, and very black on the under parts, but brown and collected into rings and rosettes on the back and sides. These differ from the spottings of the jaguar (q.v.) in being less definitely arranged and in not falling into rings inclosing one or more spots. But the distinctness of the markings varies greatly, and they are less evident in cubs than in the adults. The tail is ringed. The so-called black leopard is a not uncommon melanistic variety in which the ground color has become so nearly black that the markings can be detected only with difficulty. Black leopards are found most commonly in southern Asia. They are occasionally bred in captivity, frequently born in the same litter with spotted ones; and they seem invariably to manifest a far more savage and irreconcilable disposition than even the normal variety. A Malaysian variety is black with fulvous spots—a reversal of the normal coloration. Great variability exists in the length of the coat; and some naturalists regard the snow leopard of the high Himalayas as merely a variety, while a maned form is said to exist in Central Africa.

The haunts of the leopard are usually in wooded districts, but, although it climbs trees easily, it prefers the ground or the large limbs of low trees, whence it can spring easily on its prey. Both haunt and habits vary greatly according to the region in which the animal lives and the sort of prey upon which it depends. The leopard of the East Indian or West African jungles is different in many ways from that of the rocky but comparatively open districts of South Africa or Somaliland, or the high plains of Persia. Everywhere it sustains its reputation for a quickness, ferocity, cunning, and destructiveness greater than those of either lion or

tiger; yet its strength is by no means equal to theirs. Individuals, however, exhibit contrasting temperaments, as in other species.

Leopards feed chiefly upon mammals, as antelopes, deer, monkeys, goats, and dogs, and of the last named, like other great cats, they are especially fond. There is no other enemy so feared by monkeys, and none to which they so often fall a prey. Leopards also capture large ground birds, such as peafowl; persistently raid herds of cattle and goats; and occasionally attack human beings, chiefly women and children. Rarely an old leopard becomes a true man-eater, but once having discovered how easily it can secure human victims, is more dangerous than a man-eating tiger or lion, for it is far more stealthy, cunning, and persistent. Hunters find the pursuit of the leopard not only as exciting, but often as dangerous, as that of the tiger, and the methods pursued are in India substantially the same. See **TIGER HUNTING**; **HUNTING BIG GAME**, **CHEETA**.

The leopard is usually regarded as among the most intractable of animals, yet a few have always been among the tamed and performing troupes of the animal trainers; but as they grow old they are far less trustworthy than any other of the big cats. The leopard makes its home in a cave or dense thicket or huge hollow stump; and there the female annually bears three or four young. They thrive and breed well in captivity. Their hides are in constant demand in the fur market and command a high price. Throughout the whole of Central Africa the skin of the leopard is deemed a suitable ornament for persons of princely rank, and nowhere is it more readily admitted among the insignia of royalty than with the Niam Niam (q.v.). Roosevelt admits four races of the leopard or *Felis pardus*, viz., *suahelica*, *ruwenzori*, *chui*, and *fortis*.

Fossil remains of the leopard have been found in Pleistocene deposits in various parts of Europe, and there is even some evidence of its former occurrence in Great Britain.

Bibliography. One of the best general accounts is "The Leopard and Panther," in J. H. Porter, *Wild Beasts* (New York, 1894); also see Richard Lydekker, *Game Animals of Africa* (London, 1908), and Roosevelt and Heller, *Life-Histories of African Game Animals* (New York, 1914); beyond that consult the authorities referred to under **LION** and **TIGER**. See **Plate of CATS**, **WILD**.

LEOPARD. In heraldry (q.v.), the lion represented passant gardant. On English shields, however, the lion passant gardant has sometimes been represented as a lion.

LEOPARD CAT. A rare and little known cat (*Felis bengalensis*) of northern India, the Malay Peninsula, Sumatra, and Java, which is about two-thirds the size of the leopard. Its coloration resembles that of the leopard, but there are four longitudinal spots or stripes on the forehead, continued backward in lines to the shoulders and thence traceable in broken lines along the back. All the other spots are rather large and show a tendency to fall into rows. The limits and affinities as well as the habits of this animal are little understood. Consult St. J. Mivart, *The Cat* (New York, 1892), and Richard Lydekker, *Game Animals of India, Burma, Malaya, and Tibet* (London, 1907).

LEOPARD CATFISH, or **SURAVI**. See **CATFISH**.

LEOPARD FROG (so called from the spotted coloration). The common spotted green frog of North America (*Rana virescens*)—the most widely distributed of all American frogs and found from Athabasca Lake to southern Guatemala, except on the coast of California. It is the shad frog of New England. See FROG, and Plate of AMERICAN FROGS AND TOADS in article TOAD.

LEOPARDI, la'ô-pär'dè, ALESSANDRO (?-c.1522). A Venetian decorative sculptor of the Renaissance. He was born in Venice and probably studied under Pietro Lombardo. Little is known of his life. His first important commission was the architecture and decoration of the mausoleum of the Doge Andrea Vendramin, in SS. Giovanni et Paolo in Venice. In 1487 he was exiled from the city for some unknown indiscretion, but three years afterward was recalled to complete the statue of Colleoni, left unfinished by Verrocchio. This magnificent figure was cast in bronze by Leopardi, who supplied the fine marble pedestal with its bronze frieze. From 1503 until 1505 he was employed with the Lombardi to erect the tomb of Cardinal Zeno in St Mark's. The beautiful bronze bases for the standards in the Piazza di San Marco (1500-05) are entirely his own work, and he is thought to have designed and cast three bronze reliefs representing the Assumption of the Virgin in the Museo . . . Venice, and also the bronze relief . . . "Fiery Chariot" in the Morgan collection, New York. Leopardi was one of the first sculptors of his time in Venice. His works reveal delicate feeling for decorative effects, dignity of composition, vigor of design, and purity of execution.

LEOPARDI, GIACOMO, COUNT (1798-1837). An Italian poet, born at Recanati, June 29, 1798, of an old noble family then impoverished but a staunch supporter of the papal rule. Leopardi's childhood was a sad one, as his mother's one preoccupation was the restoration of the family fortunes. From a very tender age he gave himself up with such energy to the study of the classics and of three or four modern languages, that he greatly impaired his health, delicate from early youth, and brought on those chronic ailments that embittered all his later life; but he had acquired a scholarship sufficient in itself to give him rank. In 1817 he began his correspondence with Pietro Giordani, which stimulated him to an appreciation of artistic values and afforded the lonely youth relief in self-expression; and to this same year belongs his first love affair, which inspired his first poems (*Il primo amore*, *Spento il diurno raggio*, and *Io qui vagando*). Unable, through illness, to study, and a prey to an overpowering melancholy, due in part to friction with his father, who disapproved his increasing liberalism, he made an unsuccessful attempt to escape from his father's house in 1819 and was thereafter closely guarded. In 1822, however, he obtained leave to go to Rome, and then began a period of constant wandering to and fro, during which, a victim of unceasing physical and moral torments, he found life to be a series of disenchantments. In the employ of the publisher Stella, for whom he supervised a monumental edition of Cicero, he sojourned in Rome, Milan, Bologna, Florence, Pisa, and at intervals in Recanati. He finally went to Naples, where he died, June 14, 1837. Scantiness of money hampered him always, and his bodily infirmities prevented him

from taking the independent position which might have been his when the statesman and scholar Bunsen offered him a university professorship in Germany. A deep student of Greek and Latin, and conversant also with French, Spanish, and English, Leopardi produced philological works notable for the time, but now, with the exception of the commentary on Petrarch, antiquated. There are two periods recognizable in Leopardi's lyric activity. In the first of these, which extends from about 1816 to 1824, and embraces some 22 compositions approved by the author, his pessimism is formulated, and he rests more particularly under the influence of the classics; in the second period, which, after a couple of years given up to writing in prose, begins in 1826 and occupies the rest of his life, he develops his pessimism caused by his physical sufferings which brought him spiritual ones, and, seeing the prevalence of cruelty in nature, ends by affirming the universality of suffering. His poetry springs from feeling struggling with reality or nature, the arch enemy, and reason, and flows into forms molded by his keen intellect, exquisite sense of harmony, and mastery of language. Besides the lyrics he wrote two satires on the ineptitude or insincerity of the reformers, pointing out that to bring about the desired *risorgimento* the regeneration of the Italian character was necessary. He felt too deeply, however, to be successful in this kind of writing. His fervent patriotism, which animates the odes to Dante and to Italy, was a powerful inspiration to the generation which followed him. As to metrical structure, Leopardi was most inclined to the use of blank verse (*versi sciolti*), which in his hands attained new beauty; but in some of his best pieces he employed even internal rhyme; in general, his rhyme schemes are of an intricate nature. Of his various prose works the author gave his final approval only to the *Operette morali*, an exposition and, in parts, a defense of his doctrine of pessimism, and a few of the *Volgarizzamenti*, translations from the Greek. There appeared posthumously the prose *Pensieri*, a commentary on the society he had encountered. His critical powers are best illustrated in his *Crestomazia italiana*, containing selected passages from the most representative Italian writers of every century. For a knowledge of the inner man, nothing is more important than the *Lettere*, a collection of his letters extending . . . 1812 to a few days before his death, familiar in their style and notably sincere in tone.

Bibliography. Editions of the poems: *All' Italia* and *Sul monumento di Dante* (Rome, 1819); that of the *Ad Angelo Mai* (Bologna, 1820); the *Canzoni del conte Giacomo Leopardi* (ib., 1824); the *Versi del conte Giacomo Leopardi* (ib., 1826); the commentary by A. Stracali (2d ed., ib., 1895). The most complete editions are those of G. Chiarini (Florence, 1886) and of G. Mestica (ib., 1886). The first edition of the *Epistolario* was that of Florence, 1849; consult the 5th ed. by G. Piergili (ib., 1892). The best editions of the *Operette morali* (first published at Milan, 1827) are those of G. Chiarini (Leghorn, 1870) and G. Mestica (Florence, 1890). Commentaries: N. Zingarelli (Naples, 1895); I. Della Giovanna (Florence, 1895). Biographical and critical treatises: G. I. Montanari, *Biografia del conte Giacomo Leopardi* (Rome, 1838); F. de Sanctio, *Saggi Ori-*

tioi (Naples, 1868); id., *Nuovi saggi critici* (ib., 1879); C. Rosa, *Della vita e delle opere di Giacomo Leopardi* (Ancona, 1880); A. Ranieri, *Sette anni di sodalizio con Giacomo Leopardi* (Naples, 1880); L. Cappolletti, *Bibliografia Leopardiana* (2d ed., Parma, 1882); C. A. Traversi, *Studi su Giacomo Leopardi* (Naples, 1887); C. A. Sainte-Beuve, *Portraits contemporains*, vol. iv (2d ed., Paris, 1891), I. Della Giovanna, *La ragion poetica dei canti di Giacomo Leopardi* (Verona, 1892); A. Graf, *Foscolo, Manzoni e Leopardi* (Turin, 1898); G. Carducci, *Degli spiriti e delle forme nella poesia di G. L.* (Bologna, 1898); G. A. Cesareo, *La Vita di Giacomo Leopardi* (Florence, 1905); N. Serban, *Leopardi Sentimental* (Paris, 1913).

LEOPARD (lêp'ard) **LIZARD**. See COILED LIZARD.

LEOPARD MOTH. A moth (*Zeuzera pyrina*), of European origin, famous for the damage which its larva does by boring into the limbs and branches of forest and shade trees. It has been accidentally introduced into the United States, and has been established in the vicinity of New York City. It belongs to the family Cossidae, the larvæ of all of which are wood borers. The female has a wing expanse of two inches and is white in color spotted with black. The eggs are laid in groups attached to the bark, and the larvæ bore into the branches, either killing them or weakening them so that they readily break in a high wind.

LEOPARD SEAL. The Pacific coast variety of the common or harbor seal (*Phoca vitulina*), which is more often spotted than is that of the Atlantic. Consult Scammon, *Marine Mammals of the Northwestern Coast of North America* (San Francisco, 1874). See SEAL.

LEOPARD (or CAT) **SHARK**. A small shark (*Triakis semifasciatus*) of southern California, gray, banded and spotted with black. It is a handsome fish, and may be quickly recognized by its variegation.

LEOPARD TREE. A tree which furnishes a useful gum. See FLINDERSIA.

LEO PILATUS. See LEONZIO PILATO.

LEOPOLD I (1640-1705). Holy Roman Emperor from 1658 to 1705. He was the second son of Ferdinand III (q.v.) and Maria Anna of Spain and was born in Vienna, June 9, 1640. He was educated for the Church, but on the death of his father in April, 1657, his elder brother having died in 1654, he succeeded as ruler of the hereditary Austrian dominions (including Bohemia) and as King of Hungary, a large part of which country was still in the hands of the Turks. He was elected Emperor July 18, 1658, and crowned at Frankfort August 1 in spite of the strong objections of Mazarin. The internal affairs of his reign are unimportant. In external relations it was a troubled half century for Austria. The chronic struggle with the Turks was renewed in 1660, and Hungary and even Austria were seriously imperiled, but Montecuculi signally defeated the enemy at St. Gotthard on the Raab, Aug. 1, 1664. Leopold thereupon hastened to make a 20 years' truce with the Sultan. The persecution of the Protestants in Hungary, inspired by Leopold's intolerant zeal, and his utter disregard of the Hungarian liberties, led in 1678 to a formidable revolt in that kingdom under Count Tökölyi (q.v.). The Hungarians were supported by the Sultan, and in 1683 a vast Turkish army, under the Grand Vizier, Kara Mustapha, advanced to

Vienna, which was besieged from July 14 to September 12 and was saved only by the timely assistance of John Sobieski (q.v.), the warrior King of Poland, who, seconded by Charles of Lorraine and the electors of Saxony and Bavaria, completely routed the besieging forces and drove them beyond the Raab. This signal service of the Polish King Leopold repaid with ingratitude. In 1686 Buda was recovered from the Turks. Hungary was now mercilessly punished, and a Diet in 1687 was compelled to register the will of Leopold, making the crown hereditary in the house of Hapsburg. The expulsion of the Turks from Hungary and Transylvania was completed (1690-99) by the brilliant campaigns of Prince Eugene, and in the Treaty of Carlowitz the Turks were forced to give up Hungary between the Danube and Theiss and to allow Leopold to take Transylvania. Leopold, however, did not succeed in attaining full possession of Hungary, which obstinately resisted his drastic policy, and the task went over to his successor, Joseph I (q.v.). The natural rivalry between the house of Hapsburg and that of France involved Leopold in the European wars against Louis XIV from 1672 onward, and at his death he handed this struggle over as a legacy to his son. He joined the League of Augsburg against France in 1686 and the Grand Alliance in 1689, his allies being Sweden, Spain, Holland, Savoy, Bavaria, Saxony, and the Palatinate. The imperial armies were brilliantly led by Prince Eugene. The Peace of Ryswick, in 1697, brought to a close one period of this great struggle, but the year 1701 witnessed the outbreak of the War of the Spanish Succession, which was still in progress when Leopold died in Vienna, May 5, 1705. Consult: R. Baumstark, *Kaiser Leopold I.* (Freiburg im Breisgau, 1873); Franz Scheichl, *Leopold I. und die österreichische Politik während des Devolutionskrieges* (Leipzig, 1888); A. F. Pribram, *Zur Wahl Leopolds I.* (Vienna, 1888). See AUSTRIA-HUNGARY.

LEOPOLD II (1747-92). Holy Roman Emperor from 1790 to 1792. He was the third son of Emperor Francis I and Maria Theresa of Austria, and was born in Vienna, May 5, 1747. In 1765, on the death of his father, he became Grand Duke of Tuscany, and ruled as one of the numerous class of despotic but enlightened rulers of the eighteenth century. He abolished the Inquisition, abrogated the death penalty, equalized the land tax, favored free trade, and founded schools and almshouses. He maintained neither an army nor a navy, so that he might spend more on state improvements. In 1790, on the death of his brother, Joseph II, who left no children, he became Emperor and ruler of the Austrian dominions. He found the affairs of his hereditary states in the utmost confusion, owing to the drastic reform policy of Joseph II (q.v.). As King of Hungary he bound himself to act strictly in accordance with constitutional law. He restored order in Belgium, which had risen in insurrection under his predecessor. In 1791 peace was concluded with Turkey at Sistova. Leopold's attitude to the French Revolution in its early phases was marked by extreme moderation in spite of the efforts of the émigrés within the Empire to bring on war with France. After the attempted flight of the royal family from France, however, he entered into an agreement with the King of Prussia at Pillnitz (August, 1791), guaranteeing the integrity of their respective states, and expressing their

determination, in connection with the other Powers, to reestablish order in France, but forbidding at the same time any preparation for armed invasion of France on the part of the émigrés. Only when the war party in the French National Assembly had attained the upper hand did Leopold give up all hope of preserving peace with France. On Feb. 7, 1792, he concluded an alliance with the King of Prussia, but died March 1, 1792, before the actual declaration of war by France. His wife was Maria Louisa, daughter of Charles III of Spain. His eldest son, Francis, was the last of the Holy Roman Emperors. Consult: Adam Wolf, *Leopold II. und Maria Christina* (Vienna, 1867); H. A. L. von Sybel, *Kaiser Leopold II.* (Munich, 1869); Adolf Beer, *Joseph II. und Kaunitz* (Vienna, 1873); Adalbert Schultz, *Kaiser Leopold II. und die französische Revolution* (Leipzig, 1899).

LEOPOLD I, PRINCE OF ANHALT-DESSAU. See ANHALT-DESSAU.

LEOPOLD I, GEORGE CHRISTIAN FREDERICK (1790-1865). King of the Belgians from 1831 to 1865. He was the fourth son of Francis, Duke of Saxe-Coburg-Saalfeld, and was born Dec. 16, 1790. He received an excellent literary and scientific education and had the reputation of being one of the most cultured princes in Europe. He became a cavalry general in the Russian army in 1805 and enjoyed high favor with the Emperor Alexander I. He was present at the battles of Lützen, Bautzen, and Leipzig and took part in the invasion of France in 1814. He visited England after the Peace of 1815, and in the following year was betrothed to the Princess Charlotte, the heiress of the throne. He was naturalized by act of Parliament and received an annual pension of £50,000 and the title of Duke of Kendal. The marriage took place on May 2, 1816, but the Princess died in childbirth Nov. 5, 1817, and the child did not survive. Prince Leopold now lived in complete retirement in London and at his seat of Claremont. He received in February, 1830, the offer of the crown of Greece, and at first favorably entertained the proposal, but afterward rejected it, finding that it would not be granted to him by the Powers under conditions just or satisfactory to the Greeks. On June 4, 1831, he was elected by a national congress King of the Belgians, the people having risen against the rule of Holland, and on July 21 of that year his coronation took place at Brussels. In 1832 he married Princess Louise, daughter of Louis Philippe, King of the French, who died in 1850. As a monarch, Leopold conducted himself with great prudence, firmness, and moderation, and with constant regard to the principles of the Belgian constitution. He died Dec. 10, 1865, and was succeeded by his son, Leopold II. His daughter, Carlotta, was the wife of Maximilian, Emperor of Mexico. Consult Théodore Juste, *Les fondateurs de la monarchie belge, Léopold Ier, roi des Belges* (3 vols., Brussels, 1868), trans. into English as *Memoirs of Leopold I* (London, 1868), and Saint-René Taillandier, *Le roi Léopold et la reine Victoria* (Paris, 1878).

LEOPOLD II (1835-1909), LOUIS PHILIPPE MARIE VICTOR. King of the Belgians from 1865 to 1909. He was born April 9, 1835, the eldest son of King Leopold I. He married, in 1853, Marie Henriette, a daughter of the Archduke Joseph of Austria, and ascended the throne on the death of his father. He organized (1876) at Brussels

the African International Association (q.v.), with a view to making use of the recent discoveries in Africa. He promoted this work with energy, furnishing the means, largely from his own resources, for Stanley's exploration of the Congo. The Congo Free State (q.v.) was established and neutralized and the sovereignty of it was given to Leopold by the Berlin Conference (1885). (See BELGIUM.) His only son, Prince Leopold, died in 1869. His eldest daughter, Louise, born in 1858, was married to Prince Philippe of Saxe-Coburg, and the second daughter, Stéphanie, born in 1864, became the wife of the Crown Prince Rudolph of Austria-Hungary, who died in 1889. In 1900 she married Count Lonyay. Queen Marie Henriette died in 1902. In 1905-06 King Leopold was subjected to bitter foreign criticism in connection with the iniquitous practices pursued in the Congo Free State. This was followed by the complete annexation of the state to Belgium in 1908. See CONGO, BELGIAN. Leopold II was known as a person of immoral character, yet he was very popular because he was an able ruler and clever business man. He was succeeded by his nephew, Albert (q.v.). Consult J. de C. MacDonnell, *King Leopold II* (London, 1905), and A. S. Rappoport, *Leopold, King of the Belgians* (New York, 1910).

LEOPOLD II (1797-1870). Grand Duke of Tuscany, a son of the Grand Duke Ferdinand III, with whom he returned from exile in 1815 and whom he succeeded in 1824. His rule was efficient and mild, and he met the revolutionary movements of 1848 by granting a constitution, although he was checked from granting further administrative reforms by the overshadowing influence of Austria. He lent at first a half-hearted aid to Charles Albert of Sardinia in the war against Austria, but, unable to cope with the situation, he fled from his dominions in February, 1849, and withdrew to Naples. He returned in a few months and resumed his sway, which soon became despotic and was upheld by Austrian troops. In 1859 he refused to enter an alliance with Sardinia, and this led to his overthrow. He fled to Vienna, abdicating in favor of his son, but Tuscany, by a plebiscite, was incorporated into the Kingdom of Italy. He died an exile in Bohemia, Jan. 29, 1870. Consult M. Bartolommei-Gioli, *Il rivolgimento Toscano e l'azione popolare* (Florence, 1905).

LEOPOLD, GEORGE DUNCAN ALBERT, DUKE OF ALBANY (1853-84). The youngest son of Queen Victoria, born in Buckingham Palace. He was educated by private tutors and at Oxford and traveled extensively. In 1878 he began to take part, so far as his delicate health and the formalities of his station would permit, in social, educational, and literary affairs. He manifested a decided taste for intellectual pursuits. In 1881 he was created Duke of Albany, Earl of Clarence, and Baron Arklow, and the following year he married Princess Helena of Waldeck-Pyrmont. He died in the south of France, where he had gone for his health.

LEOPOLD, LAÛ-PÖLD, KARL GUSTAF AF (1756-1829). The Swedish Gottsched (q.v.), bulwark of French Classicism against the attacks of the Romantic Phosphorists. He attempted all forms of poetry save the epic and approached nearest to distinction in his tragedies *Odin* (1790) and *Virginia* (1802). Of his *Samlade Skrifter* he published three volumes (2d ed., 1800-02); three last volumes, edited by L. M. Enberg, were published in 1831-33.

LEOPOLD, KARL JOSEPH WILLIAM LOUIS (1821-1912). Prince Regent of Bavaria. He was born at Würzburg and married in 1844 the Archduchess Augusta of Tuscany. He fought in 1866 against Prussia, but was on the general staff of the Prussian army in the War of 1870-71. On the death of his nephew, Louis II of Bavaria, in 1886, Prince Leopold became Regent, owing to the insanity of Otto, the new King. In 1905 he established a military order in honor of the seventieth anniversary of his entrance into the army. He was succeeded in the regency by his son, Prince Louis Leopold, who in 1913 was crowned as Louis III (q.v.), after the dethronement of Otto.

LEOPOLD, LAKE. See RIKWA.

LEOPOLD, ORDER OF. 1. An Austrian order of civil and military merit, instituted in 1808 by the Emperor Francis I in memory of his father, Leopold II. It has three classes. The decoration is a cross of red enamel with white border, bearing in the centre the letters F. I. A. (Franciscus Imperator Austriæ), surrounded by the words *Integrati et Merito* (for uprightness and merit). On the reverse is the legend "*Opes regum corda subditorum*" (the riches of kings are the hearts of their subjects). The Emperor is grand master. 2. A Belgian civil and military order, founded by Leopold I in 1832, with five classes. The decoration is a white enameled cross with a wreath of oak and laurel, bearing the letters LL. and RR. (Leopoldus Rex). On the reverse are the Belgian arms and the device, "*L'union fait la force*" (in union is strength). See Plate of ORDERS.

LEOPOLD CHARLES FREDERICK (1790-1852). A Grand Duke of Baden, born in Karlsruhe, who succeeded his half brother, Louis, in 1830. He studied history at Heidelberg and later took part in the war with France. Interesting himself in the liberal ideas of his time, he granted concessions to his subjects in 1848 and in the spring of 1849 declined to oppose the movement which finally broke down all barriers and forced him to flee from the country on the night of May 13. In August he was reinstated by the troops of Prussia and the Confederation. He acted with the greatest forbearance after regaining his power. During the last years of his reign he admitted his son Frederick, who later succeeded him, to a share in the government.

LEOPOLD II, LAKE. A lake in the administrative district of the same name in the western part of Belgian Congo (Map: Congo, C 3). It is 105 miles long from north to south and its greatest width is 40 miles; its shores are very irregular. Its water is for the most part shallow, it is gradually diminishing in area, and it is drained by the Mfni, which flows from its southern end westward into the Kassai, through which it enters the lower Congo. The lake was discovered by Stanley in 1881.

LEOPOLDVILLE, lē'ō-pōld-vīl. An important station in the Belgian Congo, West Africa, situated on the left shore of Stanley Pool, in lat. 4° 20' S., 248 miles by rail from Matadi (Map: Congo, C 3). It is the eastern terminal of the Matadi-Leopoldville Railway line and the western terminus of navigation on the upper Congo. It is connected with Matadi by a pipe line, 246 miles long, through which crude oil is pumped for the use of river steamers on the upper Congo. It is also an important wireless station. Pop., about 15,000. The adjacent settlement of Kinchasse is the port of Leopoldville.

LEOSTHENES, lē-ōs'thē-nēz (Lat., from Gk. Λεωσθένης). A distinguished Athenian general. When, after the death of Alexander the Great in 323 B.C., a league was formed, having as its object the expulsion of the Macedonians from Greece, Leosthenes was put in command of the confederate army. He first repulsed the Bœotians, who were fighting on the side of the Macedonians, and then defeated Antipater, the Macedonian general, near Thermopylæ. The latter took refuge in Lamia in Thessaly, which Leosthenes immediately proceeded to besiege. (See LAMIAN WAR.) He was killed by a stone thrown from the ramparts, 322 B.C. The Athenians honored him with a public funeral, and Hyperides delivered the funeral oration.

LEOTYCHIDES, lē'ō-tīk'ī-dēz (Lat., from Gk. Λεοτύχιδης) (?-c.469 B.C.). King of Sparta (491-469 B.C.). With the aid of Cleomenes (q.v.) he brought about the deposition of his kinsman, King Demaratus (q.v.), whom he succeeded. He commanded the Greek fleet in 479 B.C., and shared with Xanthippus the honor of the victory over the Persians at Mycale. Afterward (476) he was sent into Thessaly to punish those who had sided with the Persians, but on his return home was convicted of having accepted bribes from the Aleuade, who had once more become masters of Thessaly. He was accordingly banished to Tegea, where he died.

LEOVIGILD. King of the Visigoths from 568 to 586. He was noted as a successful warrior and founder of cities. He did much to civilize his Gothic subjects and to fuse them with the Roman population of Spain into a single people. He is remembered, however, rather for his family troubles than for his real greatness. His son Hermenegild married a Catholic princess and by her influence was converted from the Arian faith, which his father held. As the head of the Catholic party he revolted against his father, who finally conquered and imprisoned him until he was killed in 585. In legend Leovigild has been depicted as a persecutor of the Catholic faith and his son as a martyred saint. Consult *Cambridge Medieval History*, vol. ii (New York, 1913).

LEPANTO, lā-pān'tō, BATTLE OF. A naval engagement fought Oct. 7, 1571, near the Curzolari Islands, at the western entrance to the Gulf of Patras, between the combined fleets of Venice, Spain, and the Papal States and a powerful Turkish armada. The determination of Sultan Selim II to wrest Cyprus from Venice was the occasion of the attack by the states united in the Holy League. The allied fleet, consisting of nearly 250 sail, of which about 200 were great galleys, was commanded by Don John of Austria (q.v.), the natural brother of the King of Spain; the Ottoman fleet, under Ali Pasha, was of about equal numerical strength. The engagement was a desperate and sanguinary one, resulting in a victory for the Christian fleet. About 8000 Christians were killed, while the Turks are believed to have lost as many as 20,000 in killed, wounded, and prisoners. More than 100 galleys were taken, besides a large number sunk. Twelve thousand Christian galley slaves were liberated by this victory, which nevertheless failed of its chief object, in that before battle was joined news came of the successful invasion of Cyprus by the Turks. The battle of Lepanto, however, effectually broke the Turkish naval power in the Mediterranean. It also ended the last Crusade. The Christian

fleet having been stationed, previous to the attack, at the mouth of the Achelous River in the neighborhood of the Curzolari Islands, the name of the latter has been given to the battle by some writers. Consult Sir William Stirling Maxwell, *Don John of Austria* (2 vols., London, 1883), and W. H. Prescott, *Reign of Philip II*, ed. by J. F. Kirke (3 vols., Philadelphia, 1902).

LEPANTO, GULF OF. See CORINTH, GULF OF.

LEPAUTRE, le-pō'tr'. A French family identified with engraving and architecture.—JEAN (1617/18–82), who was born in Paris, engraved 26 plates for Adam Philippon, a cabinetmaker, to whom he was apprenticed; but the rest of his work was independent. The best of his plates are collected in *Œuvres d'architecture de Jean Lepautre* (3 vols., 1751). In 1854 Delcoux and Doury published 100 examples of his work as *Collection des plus belles compositions de Lepautre*.—The most important work of ANTOINE (1621–91), Jean's brother, was the designing of the Hôtel de Beauvais in the Rue Saint-Antoine, Paris, of which the grand stairway and court of honor still remain. He built also the church of the abbey of Port Royal, Paris, in 1646–48, and two wings of the château of Saint-Cloud. He published *Œuvres d'architecture* (1652).—Antoine's son, PIERRE (1660–1744), was employed by Jules Hardouin-Mansart as chief draftsman in the construction of Marly, Versailles, and other royal palaces. He published *Les plans, profils, et elevations des ville et château de Versailles* (1716). He was the sculptor of "Eneas and Anchises" and "Arria and Pætus" at the Tuileries.

LEPCHAS, lep'chaz. A Tibetan stock of Sikkim, Bhutan, and part of eastern Tibet. They are a small but powerful and muscular people, without that repulsive aspect met with in so many Tibetans. Their two principal divisions are the Róng and the Khamba. They are for the most part Buddhists. The language of the Lepchas proper, or Róng, is an archaic form of Tibetan. Mainwaring, whose *Grammar of the Róng (Lepcha) Language in the Darjiling and Sikkim Hills* was published at Calcutta in 1876, entertained the extravagant opinion that this form of speech was "probably the oldest language extant." An essay, *Ueber die Sprache der Róng in Sikkim*, by Schoot, was published by the Berlin Academy in 1882, and a dictionary was revised and completed by A. Grünwedel at Berlin in 1898. Consult Von Siebold, *Results of a Scientific Mission to Japan*, 1830; *High Asia* (London, 1863), and Florence Donaldson, *In Lepcha Land* (ib., 1900).

LEPELETIER DE SAINT-FARGEAU, lep-èl'tyá' de sán făr'zhô', LOUIS MICHEL (1760–93). A French revolutionist. He became president of the Parliament of Paris and in 1789 was chosen to represent the nobility in the States-General. Although conservative at first, he was gradually won over to the revolutionary programme, became president of the Constituent Assembly in June, 1790, and later represented the Department of Yonne in the Convention, where he voted for the death of the King. Regarded by the Royalists as a traitor to his class, he was assassinated by a former member of the King's bodyguard, and his death was made the occasion of a grand funeral by the Convention. Consult *Œuvres de Michel Lapeletier Saint-Fargeau*, with a biographical sketch (Brussels, 1826).

LEPERDITIA, le-për-dish'î-â. A common

fossil ostracod (q.v.), found in rocks of Ordovician to Carboniferous age. Its shells are oblong, $\frac{1}{16}$ to $\frac{1}{4}$ of an inch long, with straight dorsal edge, smoothly rounded surface, and a small eye tubercle. These shells are abundant at some horizons, especially in the lower Trenton limestones of the Lake Champlain valley, and in the Upper Silurian water limestones of New York, Pennsylvania, and Ohio, and in limestones of similar age in Europe. In these rocks they often occur packed together in myriads. See CRUSTACEA.

LEPÈRE, le-pâr', AUGUSTE (1849–). A French painter and illustrator, born in Paris. He became a member of numerous artistic societies at home and abroad and was awarded several medals, including a gold medal at the 1900 Exposition. Besides contributing numerous illustrations to *Le Monde Illustré* (1879–86), *L'Illustration* (1886–1900), the *Revue Illustrée* and the *Revue de l'Exposition* (1900), he painted *Parisiens parisiens* (1890), "Nantes en 1900" (1900), "Paysages et coins de rues" (1900), "Dimanches parisiens" (1901), "Paris au Hasard" (1904), and "L'Eloge de la folie" (1904). He is represented in the Luxembourg and other galleries.

LEPIDIUM. A genus of plants belonging to the family Cruciferae. It includes about 65 species, widely distributed throughout the world. About 25 of these species occur in North America, among them a number of forms naturalized from Europe. The names commonly applied to members of this genus are cress, pepperwort, and peppergrass. *Lepidium sativum*, cultivated from Europe and often escaped from gardens, is the real garden cress, cultivated for its pungent foliage.

LEPIDODENDRON (Neo-Lat., from Gk. λeπίς, *lepis*, scale + δένδρον, *dendron*, tree). An important genus of extinct treelike club mosses, the remains of which are abundant in rocks of Carboniferous age in many parts of the world. These plants, some of which grew to trees 75 to 100 feet in height, were gigantic ancestors of the modern club mosses (*Lycopodium*), with which they have many points of resemblance. They grew in abundance in the swampy forests of Carboniferous coal-measure time, and their trunks, stems, leaves, and cones contributed largely to the vegetable mass which has been hardened into coal. They were stout trees with high woody trunks and central pith, and slender branches that bore closely set strap-shaped or awl-shaped leaves, and at the ends of the branches were borne large conelike fructifications (*Lepidostrobus*) comparable to those of the club mosses, but much larger. Their well-known roots have been called *stigmaria*, which name is also applied to the roots of other Carboniferous plants. *Lepidodendron* may be recognized by the form and arrangement of the scars left on the trunks and stems by the fallen leaves. These scars are rhomboidal or diamond-shaped in outline and are arranged diagonally to the axis of the stem. In this respect they differ from the scars of *Sigillaria*, which is often found associated with *Lepidodendron*, and which have a longitudinal arrangement parallel to the axis of the branch. *Lepidodendron* appears first in the Lower Devonian rocks, was very abundant in the coal measures of Carboniferous time, and became extinct in the Permian period. Several allied genera—*Ullmannia*, a tree trunk from the Devonian; *Lepidophloios*; *Lomatophloios*; and *Knorria*, represented by decorti-

cated stems in Permian rocks—are grouped together in the family *Lepidodendridae*, which is eminently characteristic of Upper Paleozoic formations.

Bibliography. Williamson, "Organization of the Fossil Plants of the Coal Measures, part iii, Lycopodiaceae, Lepidodendree, Sigillariæ," in *Philosophical Transactions* (London, 1872); Leo Lesquereux, "Description of the Coal Flora of the Carboniferous Formation in Pennsylvania and throughout the United States," in *Second Geological Survey of Pennsylvania, Report of Progress*—P. vols. 1, ii, v (Harrisburg, 1880–84); Zittel, Schimper, and Barrois, *Traité de paléontologie*, part ii, Paléophytologie (Paris, 1891); H. Solms-Laubach, *Fossil Botany* (Oxford, 1891); David White, "Fossil Flora of the Lower Coal Measures of Missouri," in *Monograph of the United States Geological Survey*, vol. xxxvii (Washington 1899).

LEPIDOLITE (from Gk. *λεπίς*, *lepis*, scale + *λίθος*, *lithos*, stone). A mineral of the mica group, having a well-marked basal cleavage, pearly lustre, and varying in color from deep red to yellow or gray. It is most frequently found in massive granular aggregates of coarse or fine scales. It resembles muscovite in chemical structure, but its alkali base is lithium instead of potassium, and it contains a varying amount of fluorine. The amount of lithium present is about 5 per cent. Lepidolite occurs in granite and gneiss, especially in veins, where it is associated with tourmaline, cassiterite, spodumene, and muscovite. Some of the well-known localities for lepidolite are Auburn, Me.; Chesterfield, Mass.; near San Diego, Cal.; and Christiania, Norway. The deposits in California are exploited, and the mineral is sold to chemical manufacturers, who recover the lithium. See LITHIUM.

LEPIDOMELANE (from Gk. *λεπίς*, *lepis*, scale + *μέλας*, *melas*, black). A variety of mica related to biotite. It is black, opaque, or translucent, has an adamantine lustre, and differs from other micas chiefly in containing a large percentage of ferric iron. It occurs near Baltimore, Md., and Litchfield, Me., and at several localities in Sweden and Finland.

LEPIDOPTERA (Neo-Lat., from Gk. *λεπίς*, *lepis*, scale + *πτερόν*, *pteron*, wing). An order of insects including all those forms known as butterflies and moths (q.v.). They possess four wings, both body and wings being covered with scales, usually variable in color, and those on the body resembling hair. The adult has mouth parts incapable of biting and usually forming a long, coiled proboscis capable of protrusion. The metamorphosis is great and abrupt, and the pupa usually has its appendages cemented to the body. The duration of the pupa stage is longer than with other insects. The classification of the Lepidoptera is now in a condition of rapid change, authorities differing greatly in their conceptions of families.

Fossil Lepidoptera are very much rarer than any other fossil insects and, except a couple of hawk moths from the Jurassic of Solenhofen, Bavaria, have been found only in Tertiary rocks. The small Microlepidoptera, especially the Tineidae, are represented by many specimens from the amber, and nearly all the other important families of moths have their Tertiary ancestors. The Oligocene shales at Florissant, Colo., have furnished two most beautifully preserved specimens of butterflies (*Prodryas* and *Harbarothoe*),

Bibliography. H. G. Dyar, "List of North American Lepidoptera and Key to the Literature of this Order of Insects," in *United States National Museum, Bulletin*, No. 52 (Washington, 1902); J. H. and A. Comstock, *How to Know Butterflies* (New York, 1904); W. J. Holland, *Butterfly Book* (2d ed., ib., 1904); id., *Moth Book* (ib., 1905); M. C. Dickerson, *Moths and Butterflies* (Boston, 1905); E. P. Felt, "Gipsy and Brown Tail Moth," in *New York State Museum, Bulletin*, No. 103 (Albany, 1906); and for fossil forms: S. H. Scudder, *Fossil Butterflies* (Salem, Mass., 1875), and Von Zittel and Eastman, *Text-book of Paleontology* (New York, 1900). See BUTTERFLIES AND MOTHS; INSECT.

LEPIDOSIREN (Neo-Lat., from Gk. *λεπίς*, *lepis*, scale + Neo-Lat. *Siren*, a genus of amphibians, from Lat. *siren*, Gk. *σείρη*, *seirēn*, siren). One of the three surviving genera of lungfishes. See MUDFISH.

LEPIDOSTROBUS (Neo-Lat., from Gk. *λεπίς*, *lepis*, scale + *στρόβος*, *strobos*, a whirling round). The cone-like fossil fruit of *Lepidodendron*, found in the coal measures of Carboniferous age. See LEPIDODENDRON.

LEPIDOTUS (Neo-Lat., from Gk. *λεπιδωτός*, scaly, from *λεπίδων*, *lepidoun*, to make scaly, from *λεπίς*, *lepis*, scale). An extinct genus of actinopterygian ganoid fishes, allied to *Semionotus*, remains of which are abundant in the Mesozoic deposits of Europe, India, and Brazil. See SEMIONOTUS.

LEPIDUS. The cognomen of an illustrious Roman family of the *Æmilia* gens. The Lepidi played an important part in the history of Rome, from Marcus *Æmilius* Lepidus, consul in 285 B.C., to Manius *Æmilius* Lepidus, consul in 11 A.D. The chief members of the family were the following: 1. M. *ÆMILIUS* *LEPIDUS* (?–152 B.C.), who gained renown as a youth by slaying an enemy and saving a citizen's life, was one of three ambassadors sent by Rome to Egypt in 201 B.C. to govern the realm of the infant Ptolemy the Fifth, *Ptolemaeus*. Although still a young man, Lepidus became the King's guardian (*tutor regis*). He was pontifex in 199, *ædile* in 192, *prætor* in Sicily in 191, and consul in 187, when he helped to conquer the Ligurians, *pontifex maximus* in 180, censor in 179, and consul again in 175. He built the *Æmilian Way* (q.v.).—2. M. *ÆMILIUS* *LEPIDUS* *PORCINA*, consul in 137 B.C., distinguished as an orator. Consult Schanz, *Geschichte der römischen Literatur*, § 74, near end (3d ed., Munich, 1907).—3. M. *ÆMILIUS* *LEPIDUS*, the triumvir (?–13 B.C.). On the outbreak of civil war between Cæsar and Pompey, Lepidus took active sides with the former, and was left in general control of affairs in Rome during Cæsar's absence (49–48 B.C.). He then was sent to Spain as proconsul, and enjoyed a triumph on his return in 47. Cæsar, as dictator, made him his *magister equitum* in this year, and again in 45 and 44, and he became consul with Cæsar in 46. In the fatal year 44 Cæsar made him governor of Gallia Narbonensis; but before he had completed his preparations to leave Rome the great dictator was assassinated. Lepidus, however, could at once rely on the army which he had been drilling, and with its help he was of great assistance to Antonius (see the second ANTONIUS, MARCUS; AUGUSTUS) in his opposition to the aristocratic faction. He was made *pontifex maximus*, and soon left with his army for

his province. Here his military strength led both parties in Rome to struggle for his support by heaping honors upon him; but though he dallied with both, his real sentiments were with Antonius, who, after his defeat at Mutina, joined him in Gaul and formed a sort of coalition with him. Octavius in Rome also put himself in correspondence with them, and the Senate was left without a powerful friend. In the conference that took place at Bononia (Bologna) in October, 43 B.C., the so-called second triumvirate was formed. Antonius and Octavius set out for the East, while Lepidus remained in Italy. From now on he played only a subordinate part in the great affairs of the state, and was even deprived of his province by his colleagues. He was consul, however, in 42 B.C., and governor in Africa from 40 to 36. In 37 the triumvirate was renewed, with Lepidus still as a member, though little consulted in the questions of the day. This proved too galling for even Lepidus, and he made an attempt to gain control of Sicily with his army. Though Lepidus was at first successful, Octavius was soon able to alienate his troops, and the former was literally brought to his knees before the young conqueror (36 B.C.). He was dropped from the triumvirate, deprived of his army, and compelled to live in retirement. Consult Fritz Bruggemann, *De M. Æmili Lepidi Vita et Gestis* (Münster, 1887), and V. Gardthausen, *Augustus und seine Zeit*, vol. 1 (Leipzig, 1891). For the Lepidi in general, see the article "Æmilius" in Friedrich Lübker, *Reallexikon des klassischen Altertums*, vol. 1 (8th ed., Leipzig, 1914).

L'ÉPINE, là'pên', ERNEST LOUIS VICTOR JULES (1826-93). A French author, born in Paris. He studied painting and music, entered the government service, and became secretary to the Duke de Morny. He was referendary in the Court of Accounts from 1865 until he died. He wrote for the *Constitutionnel* and the *Vie Parisienne*, among various journals. He collaborated with Alphonse Daudet in *La dernière idole* (1862); *L'Écuyer blanc* (1865); and *Le frère aîné* (1867). Besides these plays, which were the most successful of his writings, his books include: *La légende de Croque-mitaine* (1863), *La princesse éblouissante* (1869), *Double face* (1890); *Un an de règne* (1891).

LE PLAY, le plâ, PIERRE GUILLAUME FRÉDÉRIC (1806-82). A French mining engineer, economist, and sociologist, born at La Rivière Saint-Sauveur (Calvados). He studied at the Ecole Polytechnique, was appointed to the Department of Mines, became director of the laboratory of the Ecole des Mines and coeditor of the *Annales des Mines* in 1832, and in 1834 published the results of a geological and statistical investigation of the mineral resources of Spain made for the Spanish government. He was subsequently placed in charge of the Commission of Mining Statistics, then newly established, and received the appointments of professor of metallurgy at the Ecole des Mines (1840), inspector of mines (1848), and honorary inspector general (1868). He was prominently connected with the various world fairs. In 1881 he began the publication of the fortnightly periodical, *La Réforme Sociale*, which serves as the joint organ of the society and the unions. He was for several years Senator of the Empire, but after 1870 withdrew from public life. He followed the inductive method, and applied to social

studies the process of scientific observation of phenomena employed in the natural sciences. He is opposed at once to socialism and to *laissez-faire*, and in such writings as *La réforme sociale en France* (1864) and *L'Organisation du travail* (1870; Eng. trans. by G. Emerson, Philadelphia, 1872) urges the necessity to the stability of the social order of sympathy on the part of employer towards employed, which should count among its principal objects a thorough agreement upon the amount and method of payment of wages, and ready means for the investment of savings. His publications further include *Les ouvriers européens* (1855). Consult H. Higgs, in *Quarterly Journal of Economics*, vol. iv (Boston, 1890), and Charles de Ribbe, *Le Play d'après sa correspondance* (2d ed., Paris, 1906).

LE PLONGEON, le plôn'zhôn', AUGUSTUS (1826-1908). A French archæologist. He was born on the island of Jersey and, after liberal and professional study in France, practiced medicine for several years in Central America. There he made investigations into the early history of the continent. His *Sacred Mysteries among the Mayas and the Quiches* (1886) and *Queen Mico and the Egyptian Sphinx* (1896) attempt to establish a relationship between the ancient peoples of Mexico and Central America and those of Asia and Africa.

LEPORIDE, lèp'ô-rîd (from Lat. *lepus*, hare). A variety of European hare, now known in the United States as the Belgian hare (q.v. under RABBIT), which was formerly so named because wrongly believed to be a remarkably prolific hybrid between the common European hare and the rabbit. It is extensively bred in France and Belgium, where it is highly esteemed for food.

LEP'RA (Lat., from Gk. λέπρα, from λεπρός, lepros, scaly, from λεπτός, lepos, scale). A diseased condition of plants during which their leaves are covered with scales. The term was formerly applied also to cutaneous diseases that were accompanied by scaling of the skin. Willan and his followers use the term for psoriasis (q.v.), which is also called *lepra alphas*. Finally, the term has been applied to leprosy (*lepra vera*); this usage, however, is only an example of the confusion in the older terminology of skin diseases. See LEPROSY.

LEPRECHAUN, lèp'rè-kan', or **LUPRA-CHAUN**, lûp-râ- (Ir. *luchorpan*, *lucharban*, or *leuthbhagan*, pigmy sprite, little body, from *lu*, little, *corpán*, dim. of *corp*, body, from Lat. *corpus*, body). A familiar pygmy sprite peculiar to Irish superstition. Sometimes the leprechaun takes up his habitation in the farmhouse itself and will make himself invaluable by rendering various household services. The leprechaun is described as a manikin less than 2 feet in height, attired in cocked hat, laced coat, knee breeches, and shoes with silver buckles. He is wont to infest wine cellars, but his chosen occupation seems to be that of maker of brogans. The presence of the elf in some sequestered dell is frequently betrayed by the noise of his hammering. In such a case the human intruder must fix his gaze upon him and induce him, if possible, by threats, to reveal the hiding place of his reputed treasure or to yield up an inexhaustible purse which he is supposed to possess. If, however, the leprechaun can divert the eye of his captor momentarily, he is able to vanish. The leprechaun is the Celtic congener of the German *Kobold* and the Latin *Incubo*.

LEPROHON, le-prôN', ROSANNA ELEANOR (1832-79). A Canadian novelist and poet. She was born and educated at Montreal and at an early age contributed to the *Literary Garland*, a Canadian magazine. Some of her novels were published in serial form in the press of the United States. Her later works aimed principally to delineate the state of Canadian society

before and immediately after the English conquest. Her publications, some of which were translated into French, include: *Eveleen O'Donnell* (1859); *The Manor House of De Villeraie* (1859); *Antoinette de Mirecourt* (1864); *Armand Durand* (1868). An edition of her *Poems* was published two years after her death.

3556